Personality at work: an empirical investigation into higher order factors underpinning the socioanalytic theory of personality

Personality at Work: An empirical investigation into higher order factors underpinning the Socioanalytic Theory of Personality

Angela Mansi

A thesis submitted for the degree of Doctor of Philosophy

Department of Organizational Psychology

Birkbeck, University of London

July 2019

Declaration of authorship

I hereby declare that this thesis and the work presented in it is entirely my own. Where I have consulted the work of others, this is always clearly stated.

Name: Angela Mansi

Signed:

Date: 27 July 2019

Acknowledgements

My first acknowledgement is to my supervisor, Professor Tomas Chamorro-Premuzic, who offered rare insights into personality psychology, and encouraged my development as a researcher. I would like to thank Dr. Reece Akhtar for his patience in helping me to understand statistical analyses, and for his continued encouragement, clear thinking and good humour, throughout my research. Reece offered his time, expertise, and guidance in the verification of data analysis, and was incredibly generous given the constraints on his own time.

Thanks go to my parents, Jean Dorian and Tony Mansi, both of whom have influenced my having completed this PhD. My mother encouraged me to find things out for myself from a very early age, and always directed me to our local library for any request for information, a wonderful start for a researcher! And my father's psychology books fostered an early interest in the topic, particularly Adler, and which he encouraged by attempting to get me to see things from other people's points of view. A naturally intuitive psychologist, despite a lack of formal education, he would have been delighted to know I had completed a PhD at the University of London.

Finally, I give my deepest thanks to my beloved Naren, who has shown his absolute belief in me since I began this journey of later life education, has encouraged me at times of doubt and despondency, and delighted with me when I have achieved the smallest of goals. His ability to see the bigger picture kept things in perspective throughout. His love and support have been invaluable, and I dedicate this PhD to him.

In memoriam Dr. Joyce C. Hogan

Whose own research and generosity has made
this research possible.

Abstract

The study of personality and individual differences has been of interest to academic and practitioner psychologists for more than 100 years. Research into personality differences has provided a comprehensive source of understanding into how, and why, people are different, and what consequences these differences have (Chamorro-Premuzic, 2011; Furnham, 1997; Hogan, 2007). Socioanalytic Theory (ST) (Hogan, 1976: 1982) seeks to explain individual differences in a social setting and argues that personality comprises both reputation and identity. ST posits that three key drivers underpin social interaction and impact on an individual's personal and professional life: (1) the need to *get along* with others (GAL); (2) the need to *get ahead* (GAH); and (3) the need to find *meaning* (FM), (Hogan, 1976). The choice of this theoretical framework was based on three main reasons. First, this is the only personality taxonomy developed explicitly for and within organizational settings. For example, the Five Factor Model is largely derived from student samples and its origins are clinical and social rather than organisational. Second, no other personality framework encapsulates a systematic approach to understanding identity, reputation, bright side, and dark side of individual differences. Third, among science-based personality frameworks and assessments used in real-world contexts, the Hogan model is the most widely used, particularly with managers and leaders.

This thesis investigates whether three higher order factors of GAH, GAL and FM can be found within two psychometric measures based on ST: the Hogan Personality Inventory (HPI) and the Motives Values and Preferences Indicator (MVPI). It argues that while there have been many attempts to look at higher order factors of personality based on reputation, there have been no significant studies so far which consider the higher order factors of identity nor any which look at higher order factors of a combination of reputation and identity. This thesis aims to address this gap in current literature.

To this end, six empirical studies are conducted. Studies 1, 2 and 3 investigate which scales of the HPI and the MVPI comprise GAH, GAL and FM and whether three higher order factors will be found within the two measures. Arising from this, the design and development of a new short measure based on ST theory is described. Studies 4, 5 and 6 detail validation studies of the new measure. Study 1 investigates which scales of the HPI and the MVPI comprise higher order factors of GAH, GAL and FM. Results show two higher order factors: GAH and GAL, but no higher order factor of FM. Study 2 confirms the scales of the two higher order factors of GAH and GAL against performance measures. Results confirm two higher order factors of GAH and GAL. Study 3 explains the development and design of a new short measure for GAH and GAL. Studies include Parallel, Exploratory, and Confirmatory analyses, and Structural Equation Modelling.

Three validation studies of the new measure are conducted against the Big 5 factors, the Core Self Evaluation Scale, a measure of Engagement, Performance factors, the dark triad of personality, and the Hogan Development Survey (HDS). Study 4 validates the new measure of GAH and GAL against a measure of personality, engagement and performance outcomes. Regression analysis explores the incremental validity of the GAH and GAL constructs in the prediction of work performance. Results confirm two distinct higher order factors of GAH and GAL. GAH offers incremental validity over and above the Big Five factors in predicting both performance and engagement. GAL offers incremental validity over and above the Big Five Factors in predicting engagement. Study 5 validates the new measure against a measure of personality, engagement, the dark triad and work performance. Results show that GAH, but not GAL, has incremental validity over other measures in predicting work performance. Study 5 shows that GAH and GAL correlates with the dark triad traits leading to the inclusion of the HDS in Study 6. Results confirm the positive correlation of GAH with all aspects of the dark triad traits, and a positive correlation of GAL with Narcissism. Study 6 validates the new measure against the HPI and HDS, and investigates how the dark side of personality impacts on GAH and GAL and performance. Hierarchical regressions are conducted to explore the relationships between GAH, GAL, the HPI, the HDS and Performance. Results show that only GAH has incremental validity over and above the HDS and HPI in predicting performance.

This thesis advances research in individual differences in personality in a number of key demonstrable ways: (1) by addressing an area of research that, so far, has not been investigated, and demonstrating gaps in current understanding of personality at work, through an investigation into ST; (2) by investigating whether higher order factors, reflecting ST, would be found within the HPI and the MPVI, something that has not been done before; (3) by presenting the design, development and validation of a new short measure for assessing both identity and reputation resulting in two higher order factors: GAH and GAL. In summary, as a result this research contributes to the study of personality differences at work, as well as indicating how the direction future research, building on these findings, can be developed.

List of Abbreviations

Abbreviations are listed in the order they appear in the thesis. English spelling is used throughout, and American versions of an English word are only used when in quotes or from references.

FFM	Five Factor Model
P-E Fit	Person-Environment Fit theory
ST	Socioanalytic Theory
GAH	Getting Ahead
GAL	Getting Along
FM	Finding Meaning
HPI	Hogan Personality Inventory
MVPI	Motives, Values and Preferences Indicator
EFA	Exploratory Factor Analysis
PA	Parallel Analysis
TIPI	Ten Item Personality Inventory
UWES-9	Utrecht Work Engagement Scale (9 statements)
IPIP	International Personality Item Pool
CSES	Core Self Evaluations Scale
DT	Dark Triad
GFP	General Factor of Personality
PAF	Principal Axis Factoring
MLE	Maximum Likelihood Estimation
CFA	Confirmatory Factor Analysis
SEM	Structured Equation Modelling
HDS	Hogan Development Survey
HICs	Homogenous Item Clusters
HAS	Hogan Assessment Systems
SET	Social Exchange Theory
BPS	British Psychological Society
ICT	International Test Commission

Table of Contents

List of Figures

List of Tables

Chapter 1: Introduction

1.1 Research into Personality at Work: An Overview

Over the last century, the study of personality and how it affects performance at work has been a frequently studied area of investigation by organisational psychologists (Barrick, Mount, & Judge, 2001; Hogan & Holland, 2003; Judge, Heller, & Mount, 2002; Rothmann & Coetzer, 2003). Since the 1980's there has been a surge in studies which shows that personality relates to performance across a wide range of performance criteria, and that an understanding of personality traits can improve organisational effectiveness (Barrick & Mount 2005; Barrick, Mount, & Judge, 2001; Boudreau, Boswell, & Judge, 2001; Furnham & Heaven, 1999; Hogan & Hogan, 2009; Judge, Erez, Bono, & Thoresen, 2002; Judge & Kammeyer-Mueller, 2007; Judge & Illies, 2002; Ones, Viswesvaran, & Schmidt, 2003; Rothmann & Coetzer, 2003; Salgado, 2002; Tett, Jackson, & Rothstein, 1991; Widiger, Costa, & McCrae, 2001 and Widiger, Trull, Clarkin, Sanderson, & Costa, 2002).

Areas of research into personality differences at work include job and training proficiency (Mount & Barrick, 1998); job performance (Rothmann & Coetzer, 2003; Tett, Jackson & Rothstein, 1991); workplace absenteeism (Ones, Viswesvaran, & Schmidt, 2003); emotional stability (Barrick & Mount 2005; Boudreau, Boswell, & Judge, 2001; Furnham & Heaven, 1999; Hogan & Hogan, 2009; Judge, Erez, Bono, & Thoresen, 2002; Judge & Kammeyer-Mueller, 2007; Kets De Vries, 1999); counterproductive behaviours including turnover rates, deviant behaviours and accident rates (Salgado, 2002); performance motivation (Judge & Illies, 2002); job satisfaction (Judge, Heller, & Mount, 2002) and management derailment (Hogan & Hogan, 1997; Widiger et al., 2001; Widiger et al., 2002).

Organisational interest in personality differences has continued to develop through a need to understand how best people perform at work, and includes research into the relationship of personality with: job performance (Rothmann & Coetzer, 2003);

training (Mount & Barrick, 1998); absenteeism (Ones, Viswesvaran, & Schmidt, 2003); emotional stability (Barrick & Mount 2005; Boudreau, Boswell, & Judge, 2001; Hogan & Hogan, 2009; Judge & Kammeyer-Mueller, 2007); and the dark side of personality (Hogan & Hogan, 1997).

Although research into personality and performance has a long history, personality traits were not initially recognised as having any meaningful relationship to performance, and it is only since 1980's that research addressed this lack of attention to personality differences and work performance (Barrick, et al., 2001; Guion & Gottier, 1965). Some criticisms relating to the link between personality and performance up to the 1980's were that there were thousands of personality traits, making research unmanageable and requiring a systematic classification before a relationship could be established (Barrick, Mount, & Judge, 2001), that there was a "large number of poorly validated scales with different names" (Hogan & Roberts, 2001, p.7) and that the traits themselves lacked clarity, and were 'cloudy' (Block, 1965: 2010). In attempting to bring clarity to the area, and with the aim of finding consensus amongst organisational psychologists of the dimensions to be measured, (Barrick, Mount, & Judge, 2001) a series of meta-analyses were conducted which examined how personality traits were related to different measures of performance, (Barrick & Mount, 1991; Costa & McCrae, 1988; Digman, 1990), resulting in the Five Factor Model (FFM: Barrick & Mount, 1991; Costa & McCrae, 1988).

1.2 The Five Factor Model of Personality (FFM: Costa & McCrae, 1985; Goldberg, 1990; Wiggins, 1996)

From the 1980's, the FFM was widely accepted amongst most personality researchers as being the most comprehensive, robust and stable measure across age groups and cultures (Connor-Smith & Flachsbart, 2007; Judge & Ilies, 2002). Despite criticisms for its lack of clarity, (Block, 2010), and there not being justification for five factors, as three are inter-correlated and relate to psychoticism, (Eysenck, 1992) the FFM currently underpins many psychometric measurements for personality assessment (Connor-Smith & Flachsbart, 2007). The five factors of personality are Extroversion (E), Openness (O), Neuroticism (N), Agreeableness (A) and Conscientiousness (C)

(Costa & McCrae, 1987; Goldberg, 1990; Wiggins, 1996), showing broad traits which indicate general dispositions in individual personality and which indicate that some aspects of personality are "meaningfully related to performance" (Barrick, et al., 2001, p.10).

1.3 The FFM and Personality at Work

Research into individual differences in personality and work performance is well documented: Conscientiousness, for instance, is positively correlated across all sectors of occupational performance (Anderson & Viswesvaran, 1998; Barrick & Mount, 1991; Hogan, Hogan, & Roberts, 1996; Salgado, 1997; Tett, Jackson, & Rothstein, 1991); Emotional stability shows positive correlation across all occupations, both in performance and with work relationships, (Barrick & Mount, 1991; Hogan & Hogan, 1997; Hogan & Holland, 2003); and Agreeableness and Openness show some relationship to certain roles where Agreeableness is positively correlated to caring roles and team work (Barrick, Stewart, Neubert, & Mount, 1998) and Openness to training (Salgado, 1997). Further, personality differences have been found to influence academic performance (Poropat, 2009), values and interests for personality-environment fit (Barrick, Mount, & Gupta, 2003) and job performance outcomes (Rothmann & Koetzer, 2003).

The FFM is regarded by many differential psychologists as the most valid and robust measure for assessment of individual differences, and underpins most personality measurements (Chamorro-Premuzic & Furnham 2010; Funder, 2001; Hogan & Hogan, 2007; Soldz & Vaillant, 1999; Wiggins & Pincus, 1992). Nevertheless, studies have found an overlap between the five factors of personality, leading to a search for fewer factors, which are seen as higher order factors, to explain personality (Block, 1995; DeYoung, Peterson, & Higgins, 2002; Digman, 1997; Eysenck & Eysenck, 1985; Hogan, 1991; McCrae & Costa, 1985; Musek, 2007; Rushton, Bons, & Hur, 2008, and Wiggins & Trapnell, 1996). Research over the last 50 years into higher order factors has argued that personality can be explained by fewer factors, and in one case, as few as just one general factor of personality (Musek, 2007; Rushton, Bons, & Hur, 2008).

The usefulness of investigating for higher order factors of personality, and a summary of the progress of this research, is considered in Chapter 3. The basic tenet of personality theory has been that personality endures over time and is a stable and consistent reaction to life, to people and to events (Cattell, 1943; Costa & McCrae, 1985; Eysenck & Eysenck, 1985; Goldberg, 1990; Hogan & Hogan, 1997).

Research into personality at work, however, has generally focused on the reputational traits of personality (Barrick & Mount 2005; Judge & Illies, 2002; Widiger, Costa, & McCrae, 2001), as measured by the five factor model (Digman, 1990). There has, so far, been less research into those aspects considered part of our identity (Hogan, 1976; Hogan & Smither, 2001), in tandem with reputational differences. Hogan and Foster (2016) argue that trait theory puts people into categories which are unhelpful in understanding them, and it is "a tautology to explain what we are trying to predict with what we are trying to predict – e.g., Donald Trump is arrogant because he has a trait for arrogance" (Hogan & Foster, 2016, p.38). Hogan and Foster (2016) see traits as consistent patterns of behaviour, linked to an individual's personal values, and which guides their agendas, thus "traits describe behavior; intentions explain behavior. Traits help us make sense of what other people do, but they are little prisons for other people; we pack other people into the little trait boxes and thereby dehumanize them" (Hogan & Foster, 2016, p.42), and argue that while traits are useful for describing behaviour, they need to be taken in tandem with dispositional factors such as values and preferences, to fully understand the individual.

1.4 Person-Environment Fit (P-E Fit)

General acceptance of the FFM invites criticism in that it is not just personality traits that predict performance, but that environmental factors also affect the way an individual behaves at work. Edwards (2008) calls person-environment fit (P-E Fit) "the congruence, match, or similarity between the person and environment" (Edward, 2008, p.168), and P-E Fit considers how different environmental factors, such as job characteristics, colleagues, the organisation itself or one's manager, influence performance (Caplan, 1987; Dawis, 1992; Hackman & Oldham, 1980; House, Shane,

& Herrold, 1996; Muchinsky & Monahan, 1987; Ostroff & Schulte, 2007; Piasentin, & Chapman, 2007; Strümpfer, Danana, Gouws, & Viviers, 1998).

While personality measures cannot measure potential environmental factors that an individual may encounter in their career, they can measure individual differences, including values and preferences, and indicate where that individual might best be suited, and how they might manage different environment factors. Holland's model (1985) addressed this in part by developing a taxonomy of values and preferences, which indicated how an individual might best fit a role and organisation, attuned to their values, preferences and individual strengths. Chapter 3 outlines more fully the FFM and the criticisms of its use for personality measurement. In Chapter 2, the concept of P-E Fit is considered more fully, and discussed in terms of personality measurement at work. A measure of individual differences based on the reputational factors of the FFM, in tandem with a measure of dispositional factors including values, preferences and motives, is proposed by Hogan's Socioanalytic theory (1976) which is briefly outlined below, and more fully in Chapter 2.

1.5 Socioanalytic Theory (Hogan, 1976; Hogan & Shelton 1998).

Research has found that dispositional factors such as values, preferences, motives and needs, which are considered by Socioanalytic theory as aspects of identity, are as important as reputational traits of personality, measured by the FFM (Holland, 1985; Hogan & Hogan, 2007). Dispositional factors are recognised as having a significant impact on performance at work, and such factors, in tandem with reputational traits offer a useful indicator of personality differences and performance (Hogan, 1976; Hogan & Shelton 1998; Hogan & Holland, 2003). Socionalytic theory (Hogan, 1976), includes both personality and dispositional factors, and attempts to explain the dynamics of human behaviours by arguing that:

a) humans are a mixture of biological traits and social interactions;
b) humans adapt their behaviour according to the context as a means of survival; and

c) humans engage with other people through ritualised social interactions (Hogan, 1976; McAdams, 1997; Mead, 1934).

Socioanalytic theory asserts that during our evolution from early animal-man to becoming members of co-operative social groups, three key features emerged: 1) our need for acceptance *by* the group; 2) our need for status *within* the group and 3) a need for meaning and a sense of *purpose* of our existence, often reflected through culture, art and religion (Hogan, 1976). Socioanalytic theory argues that to succeed, we need to do two things; to get *along* with other people and to get *ahead* of them at the same time (Hogan, 1976; 1982; Hogan, Jones, & Cheek, 1985; Hogan & Hogan 1991), and argues that a synthesis of these three perspectives helps explain personality, and social action, in a social setting (Hogan, 1976, 1982; Jones, Couch, & Scott, 1997). While there has been increasing interest in research into higher order factors of personality (Ashton, Lee, Goldberg, & de Vries, 2009; Cattell, 1957; 1973; Costa & McCrae 1992a; DeYoung, 2006; DeYoung, Peterson, & Higgins, 2002; Digman, 1997; Eysenck, 1992; Hogan & Hogan, 1997), including the search for a general factor of personality (Musek 2007; Rushton, Bons, & Hur, 2008; Rushton & Irwing, 2011), there has, so far, been no previous investigation into measures of identity and reputation, in line with Socioanalytic theory, nor for three higher-order factors of getting ahead (GAH), getting along (GAL) or finding meaning (FM), within these measures.

This thesis investigates the Socioanalytic theory (Hogan, 1976) of personality (which is, from here on, referred to as ST) at work, specifically which aspects of personality influence performance and career success. Barrick et al. (2001) argue for a moratorium on meta-analytic studies, and call for researchers to "embark on a new era of research" (2001, p.27). This research is an attempt to address that and to investigate how personality scales on two psychometric measures contain higher order factors, and can indicate performance at work. It aims to contribute to the understanding of personality differences at work by investigating two psychometric measures which assess for individual differences of reputation, and differences in values, preferences and motives. It brings a new perspective to understanding personality by considering both identity and reputation and their impact on performance at work.

In line with previous research into personality measures of performance, this thesis investigates which personality traits comprise each scale of the three key drivers underpinning ST: GAH, GAL and FM. It also investigates how performance outcomes correlate with these higher order factors. In addition, a new, shorter, assessment will be designed and validated to evaluate the core components underlying GAH, GAL and FM. The construct validity of the new measure will be examined by evaluating its correlations with the Big Five Factors, Core Self Evaluations, the Dark Triad and the Hogan Development Survey. The predictive validity of the new measure will be evaluated against employee engagement and job performance.

Research in individual differences in personality shows that a key difference is that of emotional stability or adjustment, and one considered to have significant impact on the way people get on with others at work and with career success (Barrick & Mount, 2005; Boudreau, Boswell, & Judge, 2001; Furnham & Heaven, 1999; Hogan & Hogan, 2009; Hogan & Ones, 1997; Judge, Erez, Bono, & Thoresen, 2002; Judge & Kammeyer-Mueller, 2007; Kets de Vries,1989; Kets De Vries, 1999; Mansi, 2002; 2007; 2008; and Van den Berg and Feij, 1993). Managing the potentially conflicting natures of GAH and GAL requires good emotional adjustment (Hogan & Hogan, 1991), and earlier research found that that adjustment relates to performance (Hogan & Holland, 2003). It is expected, therefore, that adjustment will be part of the profiles of GAH and GAL (Adler, 1927; 1979; Argyle, 1969; Hogan & Hogan, 1991).

Currently, a profile is generated from each psychometric measure of two of the Hogan psychometric measures: the Hogan Personality Inventory (HPI) and the Motives, Values and Preferences Inventory (MVPI), and is interpreted in line with the underlying ST as an independent test result. To be able to show that three distinct higher order factors can be found within the various scales of the two tests, and to devise a new short measure from these, will be a unique and contributory factor in personnel selection, development coaching and leadership development. A new short questionnaire will be designed to assess for the higher order factors of GAH, GAL and FM.

1.6 Aims of the research

This research has three main aims:

It will investigate whether the three master motives described in ST, namely GAH, GAL and FM, can be found within two psychometric measures, the HPI and MVPI;

It will develop a new short measure whereby GAH, GAL and FM can be assessed;

It will seek to validate the new measure against existing measures, and demonstrate its validity for the purposes of selection, development and performance outcomes.

1.7 Rationale for the research

Personality differences and their relationship to job performance "is a fundamental concern of industrial-organizational psychologists throughout the world" (Barrick et al., 2001, p.21) and new research which can add to this understanding is to be encouraged. While research has investigated which factors of the FFM are related to work performance, this is argued to be limited in that the FFM reflects social perception of reputation (Srivastava, 2010) and does not consider values, preferences and motives which reflect how people find meaning and purpose in the workplace (Hogan & Hogan, 1991). Barrick et al's (2001) paper considered this lack of research and argued that personality manifests through motivation and personal goals, but that so far, there has been a lack of an acceptable framework for "studying motivational constructs", (2001, p.25).

An investigation into two psychometric measures which measure personality and identity adds to this field of study, and in line with Barrick et al. (2010), considers a new area of personality research. Further, this research builds on earlier studies which investigated how measures of personality might contain fewer higher order factors. In this case, investigation of the HPI and the MVPI will seek three higher order factors would allow for particular profiles to be measured which would include a mixture of traits from the personality measurement HPI and the meanings, values and motives

MVPI an individual has, and indicate whether someone is more disposed to GAH, GAL or FM. Getting *ahead* relates to task performance, whereas getting *along* relates to how rewarding that person is to be with (Hogan & Hogan, 1997; Hogan & Chamorro-Premuzic, 2015a), and the best predictors should be able to assess individual differences in relation to both (Hogan & Chamorro-Premuzic, 2015a). There is, currently, less research on finding meaning in relation to ST and this aspect will be investigated in this research.

Furthermore, managing the potentially conflicting natures of GAH and GAL requires skill and it will be argued that social skills, as well as emotional adjustment, will factor significantly in the profiles of both GAH and GAL, and is something which will be explored later in the thesis. How well someone performs at work can be assessed through several measures, one of which is an appraisal by their supervisor. Performance appraisals, however, often reflect how rewarding an individual is for their supervisor, and not necessarily how well they perform for organisational goals. One factor with significant influence on the way others see an individual, and how that person manages the conflicting nature of the needs to get ahead and get along, frequently manifests through their level of emotional adjustment. Research outlined in this thesis will demonstrate how important emotional adjustment is to both higher order factors, and that to get along, and at the same time, to get ahead of others, requires an emotional maturity that is measured by the HPI. The development of a new measure will be followed by validation studies against existing measures, which are outlined below.

1.8 Chapter structure of the thesis

There are ten chapters in this thesis. This, the first chapter, shows an overview of the thesis and outlines the research aims and rationale. It also gives a background to personality theory so far, in particular, the meta-analytic studies of the FFM, and how the FFM relates to performance at work. It explains how personality relates to job performance research, and introduces the FFM and P-E Fit theory, as well as ST, all of which are evaluated in the following chapters. The following nine chapters include:

Chapter 2. This chapter gives a comprehensive overview of ST and shows how it attempts to explain human behaviour and personality differences, and its relevance for the workplace. It explains how ST is rooted in three key perspectives and how these interpret personality in a social setting (Hogan, 1976; 1982). It will explain how individuals strive to get along with others, to get ahead of them and to find a sense of purpose and meaning in life, and it will consider how such different drives impact on individual personality, particularly at work. This chapter evaluates personality theory in general, the FFM specifically, and P-E Fit theory, and explains how personality theory is applicable to workplace behaviour.

Chapter 3. This chapter introduces the concept of higher order factors, and describes the history, and purpose, of searching for fewer personality traits, culminating in the search for the general factor of personality (GFP). Chapter 3 introduces the ST of Reputation and Identity, and explains why the search for higher order factors within the two measures used in this study - HPI and the MVPI- was conducted.

Chapter 4. This chapter outlines the Research Methodology that underpins the thesis, explaining why quantitative methods were chosen and how they relate to the literature review, aims and goals of the research. This chapter explains how the methodology chosen here fits with both the theoretical framework and the research tradition of the area in this study. It will outline the six empirical studies of the thesis.

Chapter 5. Chapter 5 contains Study 1, the first empirical study, and investigates which scales of the HPI and the MVPI form part of GAH, GAL and FM. This study investigates whether higher order factors are found within the HPI and the MVPI. Preliminary analysis, including Exploratory Factor Analysis (EFA) and Parallel Analysis (PA) explores which scales relate to GAH, GAL and FM. It identifies two higher order factors underlying ST and initiates the development for a new short measure of GAH and GAL.

Chapter 6. This chapter contains Study 2, the second empirical study, and confirms which scales form part of the two higher order factors, GAH and GAL. It builds on the preceding study with CFA in order to test the model derived in Chapter 5. It also

investigates how GAH and GAL correlate with performance, which, in this study, is measured by supervisor ratings.

Chapter 7. This chapter provides an explanation of the development and design of the new measure for GAH and GAL. It follows Hinkin's Scale Development Process (1988) to establish the psychometric properties of the new measure. It explains the item development process for this study. EFA found 14 items: 7 for GAH; and 7 for GAL. Parallel, Exploratory and Confirmatory Analyses were conducted, and two distinct factors relating to GAH and GAL were identified and confirmed.

Chapter 8. Chapter 8 contains two validation studies of the new measure: Part 1 outlines Study 4, and Part 2 outlines Study 5. The new measure for GAH and GAL was validated against the Ten Item Personality Inventory (TIPI: a measure of the Big Five); the Utrecht Work Engagement Scale-9 (UWES-9: a measure of work engagement); and performance outcomes. Results found that GAH offered incremental validity over and above the Big Five Factors of personality in predicting performance and engagement. Part 2 outlines the second validation study. The new measure was validated against the International Personality Item Pool (IPIP: a measure of the Big Five); the Core Self Evaluation Scale (CSES); and the SD3, a short measure of the dark triad. The same performance measures used in Part 1 were applied here. Results found that GAH has incremental validity over and above CSE and the Dark Triad in predicting performance, and CSE is a better predictor of performance than GAL.

Chapter 9. This chapter outlines Study 6, the third and final validation of the new measure. The study investigates the predictive validity of the GAH and GAL against the HDS to assess for 'dark side traits' (Hogan & Hogan, 1997). Results show that only GAH, not GAL, was found to have incremental validity over the HDS and HPI in predicting performance.

Chapter 10. This final chapter of the thesis provides a critical evaluation of the research conducted, including a critique of ST, the methodology applied in this thesis, and how future research building on this thesis could be developed. It will synthesise the research development of the six empirical studies and will argue how the limitations in this research, and the research findings, can contribute to current understanding in

individual differences personality and assessment at work, and be developed on for future research in this area.

Chapter 2: Socioanalytic Theory

2.1 Introduction

Chapter 1 explained the relationship between personality and performance with reference to the meta-analytic studies conducted on the FFM. While the FFM has been found to be a robust measure of reputational traits indicative of performance, there is still a lack of valid motivational constructs which measure values and preferences, seen as the motivating force for personality to manifest through performance (Mount & Barrick, 1995). Research highlighted the "sporadic and piecemeal fashion" (Judge & Ilies, 2002 p.797) of research on personality and motivational needs, which acknowledges that personality differences are involved in how people behave at work, but that attempts to link them have been inconclusive. While most personality and motivation studies have focussed on motivation and reward (Locke, Shaw, Saari, & Latham, 1981), Hogan (1976) argues that individuals are driven to act based on their values, and a need to find a meaning and purpose in what they do. Holland (1985) argues that personality differences aligned to values lead to seeking meaningful work, and it is the match between the two that results not only in a good person-environment fit, but leads to achievable, measureable goals (Holland, 1985; Mount & Barrick, 1995; Judge & Ilies, 2002).

This chapter outlines ST theory and explains why ST is important for understanding personality differences and performance at work. It seeks to addresses the lack of a clear measurement for personality which includes motives, values and preferences. It also considers the use of the FFM in personality assessment and its influence on personality measures generally for workplace performance. ST attempts to answer the critics of the FFM model which is argued to be limited to personality traits alone, taking little account of environmental and dispositional factors. ST explains human behaviour, and personality differences, by arguing that we are a mixture of biological traits and social interactions, that we learn to adapt our behaviour according to the context, and

that we engage with other people through ritualised social interactions (McAdams, 1997).

ST is rooted in three key perspectives: that of evolutionary psychology; psychodynamic theory; and symbolic interactionism. It argues that a synthesis of these three perspectives helps explain personality in a social setting (Hogan, 1976; 1982). ST asserts that during our evolution from early animal man to becoming members of co-operative social groups, three key features emerged: 1) our need for acceptance *by* the group (a need for love); 2) our need for status *within* the group (a need for power); and 3) a need for meaning and a sense of *purpose* of our existence, often reflected through culture, art and religion (Hogan & Smither, 2001). As reviewed in Hogan and Smither (2001), these three core needs are represented in most motivational theories of human behavior, including the three dominant paradigms underpinning modern personality psychology: evolutionary, psychoanalytic, and interactionist. These are discussed in more detail below.

2.2 Three key perspectives of Socioanalytic theory

2.2.1 Evolutionary psychology

Evolutionary psychology is drawn from Darwin's theory of adaptation (Darwin, 1809-1882), which posits that the most adaptable survive. Whereas evolutionary theory focuses on physical adaption, the basic tenet of evolutionary psychology is that we have adapted psychologically and behaviourally over time, as well as physically, in order to adapt ourselves to changing environments (Caporael, 2001,) so focusing on the evolution of the mind (Buss, 1999; Cosmides & Tooby 1997; Sterelny, 2003). The psychological perspective of evolution has "produced a wealth of discoveries, ranging from adaptations for altruism to the dark sides of social conflict" (Buss, 2009, p.143), and argues that much of our modern day behaviours are adaptations which evolved as a solution to living in social groups (Lorenz, 1974; Barkow et al., 1992; Buss, 2009). Later research shows, however, that what may be a solution to group living could also become a hindrance to the individual where "getting ahead and getting along are the

two great problems in life that each person must solve" (Hogan, Johnson, & Briggs, 1997, p.26).

Evolutionary psychology argues that we are products of biological evolution whereby "people have changed little over five million years, and that human nature is best understood when placed in the context of the original conditions of evolutionary adaption" (Hogan, 1982, p. 56). This perspective sees that we evolved in small groups and learned to adapt to other people and our environment in order not only to survive and receive mutual support, but to thrive and achieve status within our group (Barkow et al., 1992; Buss, 2009; Chagnon & Irons, 1979; Jones et al., 1997). It posits that we develop drives as a response to our immediate environment and, at the most basic level, getting along with others, and getting ahead of the group, ensures survival of one's genes. Those "who cannot get along with others and who lack status and power have reduced opportunities for reproductive success" (Hogan & Holland, 2003, p.2). Building on this view, ST attempts to identify the individual characteristics which are most suited to human development in group living, both in terms of biological and psychological adaption where "the social map of the persons, relationships, motives interactions, emotions and intentions" make up our social world (Cosmides & Tooby, 1992 p.163).

Criticisms of the evolutionary perspective focus on its lack of credibility for any explanations for individual behaviour, particularly the theory of cognitive modality. Cognitive modality asserts that the mind comprises individual modules which are task specific, reactive to external events, and where not needed, are eliminated during our evolution, but which takes no account of the plasticity of the brain reacting to new events and individual learning experiences (Ward, 2012). Buller (2005) argues that if individual modules are evolved out, some human responses such as inexplicable phobias would not exist (Buller, 2005), supporting an explanation of learned behaviour. Further criticism attacks the reductionist, and simplistic, view of evolutionary psychology, which denies the social and cultural influences of cognitive development over a lifetime (Lewontin, Rose, & Kamin, 1984). Nevertheless, it is argued that innate individual differences do have an impact on behaviour, are evoked by the social situation, (Wolfe, Lennox, & Cutler, 1986) and manifest when trying to gain acceptance or status in groups (Hogan, 1986). These individual differences can be explained with

reference to two key perspectives on personality: the psychoanalytic view; and symbolic interactionism, discussed below.

2.2.2 Psychoanalytic theory

Psychoanalytic theory argues that most behaviour is driven by unconscious desires and motivation (Freud, 1923), and that our adult behaviour is shaped by our early childhood experiences (Adler, 1927; 1932; Horney, 1937; 1950; Fromm, 1947; and Bowlby, 1969). This can result in a compensatory striving for superiority over others, due to early childhood fears of feeling anxious, inadequate, threatened or vulnerable and lacking in status and power as children to deal with such situations (Adler, 1932; Horney, 1937; 1942; 1945). Thus, the human need to get on with others, and at the same time to become superior to others, developed. In order to compensate for feeling powerless, we strive to acquire security and status, and the dichotomy of balancing these two drives can be seen in various research studies over many decades including studies on, for example, striving for superiority vs. anxiety control (Adler, 1927); belonging vs. esteem needs (Maslow, 1954); striving for approval vs. avoidance of criticism (Murphy, 1954); punishment avoidance vs. reward-seeking (Lasch, 1984); and getting ahead and getting along (Hogan, 1982).

Adler (1927), in particular, focused "on the importance of interpersonal relations, rather than on the gratification of physiologically based drives, as emphasised by Freud" (Crandall, 1981, p.4), and argued that it was in the satisfaction of our need for love, affection, safety, and a sense of belonging, that the key to a healthy and stable emotional nature lay (Adler, 1927; Maslow 1954; Crandall, 1981). When we develop as emotionally mature individuals, we are more likely to enjoy mature, satisfying adult relationships, and it is through considering the needs of others that a child develops into an emotionally mature adult, which helps with relationships and underpins the concept of 'social interest' (Adler, 1927).

2.2.2.1 Adler's Theory of Social Interest

The concept of 'getting ahead' derives from Adler's 'striving for superiority' and is an innate drive whereby the individual seeks to find personal fulfilment and

transcendence encapsulated in Adler's statement "to live is to develop" (Crandall, 1981 p.21). Adler stated that a 'superiority' attitude was, in fact, related to an inferiority complex (Adler, 1932), and that when people try to impress by their superior status or rank, they are in fact lacking in self-belief, thus displaying an innate need to get ahead in order to feel less inadequate. Nevertheless, he argued that a striving for superiority and a desire to achieve growth and control is considered a natural and healthy human desire, but it needs to work *in tandem* with a social interest for other people. Without this social interest, those striving for superiority will become so self-centred that they will lose the interest and support of those around them (Adler, 1932), and "unless the striving for superiority is integrated with social interest, it will be stunted and distorted, and end up as a self-defeating tendency" (Crandall, 1981, p.21), something which later researchers called the 'dark side of personality' (Hogan & Hogan, 2009), and which is discussed in Chapter 9.

Adler's theory is criticised in that is assumes everyone is born with an inferiority complex, and that their striving for achievement relates to this, rather than to a motivation to succeed (Ansbacher, 1978). Further, Adler was "being unrealistically optimistic" about humanity by not giving an adequate explanation for violence or irrationality (Ansbacher, 1978, p.118). His optimism is seen in his view that social interest manifests as an empathic understanding and concern for others, an altruistic consideration of their needs above one's own; a willingness to co-operate with other people (Adler, 1927; Crandall, 1981), and a mature, emotionally stable, personality (Adler, 1927; Crandall, 1981; Erikson, 1950), as well as 'self-actualizing' individuals who are able to care for, and show an interest, in other people (Maslow, 1954). Such healthy, well-adjusted individuals think less of their own needs than they do of others' and are seen as a benefit to humanity and as making a contribution to society generally (Adler, 1927), a view challenged as being far too optimistic of human nature, as well as lacking in replication and falsifiability (Ansbacher, 1978; Mangold, 2017).

Other psychologists, however, agreed with Adler and argued that too much emphasis has been given to individual satisfaction, suggesting that it is co-operation with others that best serves the individual and society (Crandall, 1981; Erikson, 1950; Hogan, 1976), where "the feeling of belonging to a group or a community gives life purpose and direction" (Hogan, 1975, p.537). Further it was argued that "self-centred and

egocentric behaviour is a sign of pathology rather than the natural concomitant of unspoiled innocence" (Hogan, 1975, p. 538). Moreover, the drive to succeed and 'get ahead' without taking into account other people "works against real growth" leaving people feeling alienated, threatened, inadequate and unpopular (Crandall, 1981, p.21), leading to the development, and manifestation, of dark side behaviours (Hogan & Hogan, 1997), discussed in Chapter 9.

Social interest in others provides many benefits for the individual: it ensures less loneliness, more co-operation and more support from others, as well as greater ability to ask for support, resources and advice (Adler, 1927; Crandall, 1981). People who are involved, caring, considerate and helpful are generally better liked and "more easily accepted into a group than those who are more self-seeking" (Crandall, 1981, p.20). Such pleasantness however, may, be at a cost to the individual in terms of status. Anderson, John, Keltner & Kring (2001) looked at how personality impacts on adult peer relationships and found that Agreeableness does not predict status for either women or men, which suggests that status (or "getting ahead") may be inimical to "getting along" (Hogan, 1982; Anderson et al., 2001).

2.2.3 Symbolic Interactionism

The third influence on ST is that of Symbolic Interactionism (George Herbert Mead, 1863-1931), which explains how our interactions with others depend on, and are interpreted according to, the meanings we attribute to people, events and objects, most of which are shaped in early childhood by the way others treat us (Cooley, 1902; Mead, 1934). While drawing primarily on the works of Mead (1934), this perspective is influenced by Cooley (1902) and Goffman (1959) who recognised the influence that others have on our behaviour, and the importance of role-playing within a social setting. We interpret verbal, non-verbal and symbolic language and behaviour when engaged with others in a social situation through words, gestures, social rules and roles, all of which give meaning to the world for the individual and their groups (Mead, 1934; LaRossa & Reitzes, 1993) and through which we learn to adapt our behaviour according to social and situational norms (Goffman, 1959).

Individual behaviour is shaped by the situation and context, and comprises a mixture

of personality differences, social position and cultural expectations according to Mead (1934). The difficulty for the individual is that symbolic meanings are personally interpreted, and a misunderstanding of them can cause problems for the individual, particularly in unfamiliar surrounds such as a new organisation (LaRossa & Reitzes, 1993). How others react to us in a social setting helps in two ways: we will learn about how others see us, and we will learn how to react in response to them (Mead, 1934; Blumer, 1969). In order to gain acceptance (GAL) and status (GAH), we seek out social roles that allow us to interact with others in order to satisfy these two needs, and we learn to shape our behaviour and reactions in order to be seen in the best light, and to be accepted by social groups (Goffman, 1959; Trevino, 2003).

Social interaction involves an exchange with others, a social performance, which either increases or diminishes our social standing (Wiggins, 1996). Examples include joining clubs or groups of like-minded individuals, voluntary roles, and occupations which allow us to display our particular strengths (Holland, 1966), where we gain acceptance *by* the group as well as the opportunity to advance *within* the group. ST argues that in any social interaction, our presentation of ourselves is as an *actor*, in front of an audience which judges our performance (Goffman, 1959; Ritzer, 2008). Their evaluation of us, and of our performance, results in our reputations. Furthermore, there is also a hidden, private area of us relating to our values, that allows us to be ourselves, away from the audience, and this is what we call our identity (Ritzer, 2008). The ways in which individuals manage the two conflicting drives of getting ahead and getting along is, according to this theory, influenced by their individual personality within a social setting.

This theory is criticised for its lack of a clear framework, its focus on personal behaviour rather than on the situation, group dynamics, or shared cultural meanings, and for being too broad a theory and lacking falsifiability (West & Turner, 2017). Symbolic interactionism is, nevertheless, seen as a useful approach "that strives to understand human behavior, not to predict and control it, nor to have more statistical knowledge of it" (Musolf, 2003, p.91), and contributes "a down-to-earth approach to the scientific study of human group life and human conduct" (Blumer, 1969, p.47) as well as recognising the meanings that individuals bring to their personal experience and the importance these have in interpersonal relationships (West & Turner, 2017).

Despite a lack of published research criticising ST generally, criticisms of the three components of ST are that the three perspectives above (evolutionary, psychodynamic and symbolic interactions), often cancel each other out, and may be seen rather as a 'pick and mix' of theories and lacking in rigour. Evolutionary psychology, for instance, does not give much weight to social interactions or learned behaviour, arguing for innate, inheritable traits of modular cognitive functions, whereas Psychodynamic theory argues that the unconscious is the main driver of personality reactions, dismissing conscious decisions to react to events and other people. Adler in particular, is seen as far too optimistic in his view of human nature, and his theory generally lacking in foundation (Ansbacher, 1978). Lastly, Symbolic interactionism argues that we engage with other people through ritualised social interactions (McAdams, 1997) which seems to be at odds with the two perspectives above, both of which argue for factors beyond our control, such as innate traits and unconscious drives, and the theory itself is lacking in focus and explanation. ST could, therefore, be seen as covering all angles, with a lack of clear and specific perspective on personality.

Nevertheless, ST argues that personality cannot fully be understood unless an understanding of all the influences on personality are considered: "personality is not an exact science" (Hogan & Foster, 2016, p.41) and it is argued that all theories of personality sometimes conflict, and at times converge. Each perspective is generally argued for from the point of its adherents, and though each has something of value in understanding personality, none, so far, offers a comprehensive understanding of personality as seen by the ST perspective, and behaviour (Hogan & Smither, 2001). The two components of personality, according to ST, are *identity* and *reputation* (Hogan, Johnson, & Briggs, 1997), and will be discussed next.

2.3 Identity and Reputation

2.3.1 Identity

Identity is "that which binds together past, present and future, lends coherence, unity and purpose of personality, and allows adaptation to changing contexts" (Emmons, 1997,

p.489), and comprises individual behaviours, thoughts, feelings, purpose, values and characteristics that are continuous over a lifetime (Buss, 1997). Identity includes a set of roles and relationships which are socially defined and which lead us to choosing to become one type of person rather than another (Baumeister, 1997). Thus, identity is that with which we identify as being 'us'. Hogan (1976) calls this the 'actor' perspective - the insider view.

Hogan and Fico (2011) argue that while the study of identity has been a central focus of research during the last 100 years, until recently, while recognising Holland's (1985) taxonomy of identity and preferences, there were few robust measures of identity, and none that provided a clear taxonomy. Moreover, the way we see ourselves is often at odds with how others see us, as we rationalise the reasons for our actions (Hogan & Smither, 2001) and fail to see ourselves as others do, which can result in a failure for achieving career success (Hogan & Smither, 2001). Notably, only the Socioanalytic perspective uses terms such as reputation and identity to describe the insider vs. outsider view of personality, where the concept is otherwise widely referred to as Private/Public Self (Baumeister, 1986; Schlenker, 1986). Whatever the terminology, the importance of considering both in tandem is acknowledged: "It is argued that there is significant interplay between these two selves; they are intertwined and equally significant" (Schlenker, 1986, p.22). Identity is shaped by the culture in which we live, and encompasses personality, culture, societal norms and social class (Hogan & Smither, 2001), all of which have an impact on what is socially acceptable behaviour. Measuring for identity, however, can be problematic as data is usually through self-report assessment. Nevertheless, identity is closely linked to personal values and the importance of this is in relation to the workplace is discussed below.

2.3.2 Identity and Values

Research shows that people rarely stay for long in an organisation that is too distant from their values (French, Rodgers, & Cobb, 1974), and the compatibility of one's values with those of the organisation are a significant predictor of general satisfaction, including how well we get on with others at work, suggesting a healthy organisational fit between the individual, their values and the organisational culture (French et al, 1974; Holland, 1985; Chatman, 1991). Hogan and Blake (1996) argue that motives, values

and preferences are closely related concepts and any difference may be as much a matter of semantics and personal choice. For instance, values are equated with beliefs (Allport, 1961; Rokeach, 1973), attitudes (Campbell, 1963), needs (Maslow, 1954), interests (Allport, 1961; Perry, 1954), and preferences (Katzell, 1964; Rokeach, 1973), all of which are measured by the MVPI.

Personality measures, in general, ask for an individual's typical response to various situations. Interest and values measures, however, ask about a person's preferences, (Hogan, 1995). Thus, interest measures allow people to describe themselves as they would like to be seen by others, so are not measuring self-reports but self-presentations (Hogan & Foster, 2016). It is argued that interest inventories get closer to the content of a person's self-concept than do personality measures as they can measure the identity of an individual (Hogan & Hogan, 2010).

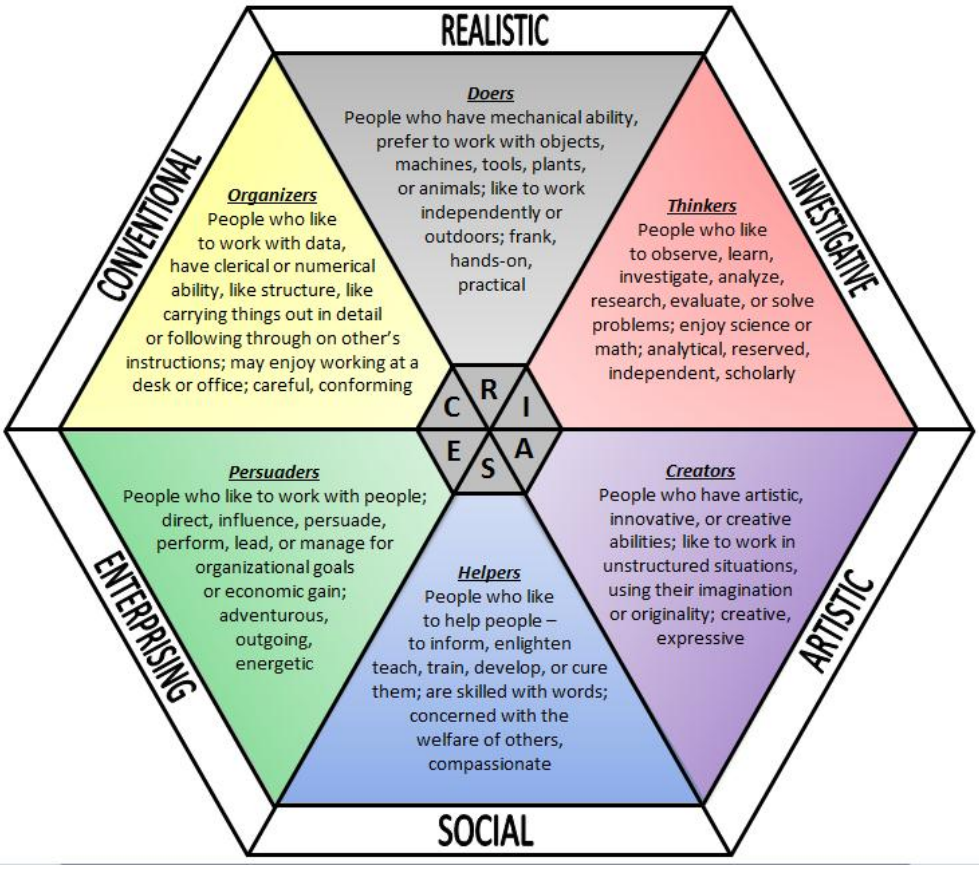
The MVPI (Hogan & Hogan, 2010) is a measure which indicates an individual's preferences in terms of core drivers and values which guide their career choices. The MVPI includes the ten scales of Recognition, Power, Hedonism, Altruistic, Affiliation, Tradition, Security, Commerce, Aesthetics and Science, and a full explanation of the measure is given in Chapter 5, Section 5.3.2.2. and Table 5.3. These ten scales are indicative of areas of work that give meaning to an individual, and as argued by Holland (1985) influence the area of work where values and preferences can flourish. Other than Holland's work on identity and vocational choice (Holland, 1985) there has been a paucity of research into identity that offers both a robust measure, and a practical application, of how identity impacts on performance. If identity is the 'insider' view then we have, necessarily, to rely on self-report measures which reflect values and motives, and recent research into personality and career success (Chamorro-Premuzic, 2011; Schneider & Smith, 2004) argues that identity must be defined in terms of values for three reasons:

1) because scores on measures of values and career interests are stable over time (Chamorro-Premuzic, 2011);
2) people seem proud of their values and are generally eager to discuss them; (Chamorro-Premuzic, 2011); and,
3) individual values determine how well people fit with the culture of a

team or organisation (Holland, 1985; Schneider & Smith, 2004), which will have a significant impact on their career success.

Reputation is argued to be a better predictor of career success than identity (Hogan & Chamorro-Premuzic, 2015a), as reputation is that which is observed by others, but it is values that drive us towards one area of work or another, and Holland (1985) argued that it is our personality influences our career choices. Holland's (1985) typology of workplace roles found that people matched six main personality types which lend themselves to certain occupations. He argued that when the work environment 'fits' their personality they thrive and have fulfilling careers (Holland, 1985). A mismatch between personality and work, or between an individual and their team, will result in dissatisfaction, as well as lower performance, and the resultant poorer assessment from their supervisor (Holland, 1985).

Figure 2.1 *Holland's Career Model (1985)*



In a job where personal values, ability and skills are allowed expression, performance

is rated higher (Holland, 1985; Furnham, Hyde, & Trickey, 2013a), though as values are a major component of individual identity, any threat to them evokes strong emotional reactions, and the importance of emotional adjustment and the influence on personality will be discussed later. To summarise, identity is one aspect of personality, the insider view, which incorporates our values. The second aspect of personality, according to ST, is that of reputation and will be discussed now.

2.3.3 Reputation

ST states that reputations "are highly consequential, are highly correlated with each person's status and social acceptance, and to a large extent they predict quality of life and reproductive success" (Jones, Couch, & Scott, 1997, p.467). Reputation is significantly correlated to the Five Factor Model which is based on observer ratings (Wiggins, 1996; Hogan & Ones, 1997; Hogan & Fico, 2011), and is important because it is how others expect to see us and how they make judgements about us. Reputations are formed by observers using particular trait words to describe someone, i.e. he is amusing, charming, witty, and generous; she is intelligent, sociable, friendly and warm. Thus, that person becomes known by the way they are described, by one person to another, generally using trait terminology. If past behaviour is regarded as the best predictor of future behaviour (Hogan & Fico, 2011) then an individual's reputation offers useful information about potential future performance. Thus, whether we hire, promote, train, trust or fire people is based on their reputation (Hogan & Chamorro-Premuzic, 2015a).

According to ST, personality comprises both identity and reputation: identity relates to the insider perspective incorporating values and meaning; and reputation to the outsider view upon which others make their judgements of us. Both aspects have an impact on how we either GAH and/or GAL at work, and the difficulty in managing these two needs can result in complex, ritualised role playing in social situations. The way in which these two conflicting desires are managed will depend on our personality differences, especially that of emotional stability, how we manage our reputations, and the way we treat others, as to succeed in our careers two things are required: to get *along* with other people and to get *ahead* of them at the same time, (Hogan, 1976; 1982; Hogan et al., 1985; Hogan & Hogan, 1991). These two needs can mean that

interpersonal relationships are often problematic due to the conflicting needs of each (Hogan et al., 1985), and it argues that the process of social interaction between people and groups is crucial in determining how well someone will do in getting along (acceptance) and ahead (status), particularly at work (Hogan & Ones, 1997).

To get along with others requires co-operation, mutual support and a consideration of others' needs (Crandall, 1981). To get ahead, however, requires that we strive to achieve superiority over them, to be on a higher level of the social hierarchy, which will allow us greater access to resources, opportunities and control. These two drives need careful management if an individual wishes to achieve success both at work and in their personal relationships. Once accepted into a group, achievement of a recognised role not only gives us status, but also cements our place in the group thus providing us with enhanced security (Eibl-Eibesfeldt, 1989; Barkow, Cosmides, & Tooby, 1992; Hogan & Shelton, 1998). The management of these two drivers, particularly in the workplace, is related to having effective social skills, which translates the insider view, identity, into the outsider perspective, which is reputation (Hogan & Hogan, 1997). The potential for conflict, particularly in the workplace when competing for resources is clear, and how individual differences in personality affect this can help with more effective selection and development (Ozer & Benet-Martinez, 2006). An explanation of the three key drivers, GAH, GAL and FM is given below.

2.4 Acceptance – Getting Along (GAL)

Getting along with others is seen as an essential requirement for early human evolution within groups, and is "associated with happiness, health and adjustment" (Jones et al., 1997, p.465). Furthermore, ST argues that GAL ensures survival, and develops in response to early relationships during childhood (Horney, 1950; Hogan, 1975; Bowlby, 1999; Winnicott, 1964). A lack of security and acceptance, as children, can result in poor self-esteem, as well as low trust in others, and lead to unhealthy adult relationships (Bowlby, 1999), and immature emotional responses (Horney, 1937; 1950), and it is in our early development that we learn how to manage these close attachments and form mature adult relationships (Adler, 1927; Horney, 1937; 1939; Bowlby, 1999). Getting

along with others requires a shared trust and necessitates a manifestation of traits as kindness, concern for others, friendliness and empathy (Adami & Hintze, 2013) and such traits are seen as supporting, and contributing to the general well-being of group members, and facilitating to group achievements. Research shows that being selfish is detrimental to human evolution, and selfish behaviour is seen as threatening to the group's efficiency, progress and security (Adami & Hintze, 2013).

However, criticisms of this view are that GAL compromises an individual's ascendancy in the group, as being too agreeable and too co-operative can have a negative impact on social status and career success (Anderson et al., 2001; Hogan & Holland, 2003), indicating that GAL might not be as successful a strategy to survival, or workplace achievement, as GAH. This is discussed further in Chapter 9.

2.5 Status – Getting Ahead (GAH)

GAH implies achieving superiority over others in terms of status and resources (Hogan, 1975), and helps to reduce feelings of inadequacy (Adler, 1979). Status confirms our place within the group and satisfies a need for personal achievement and superiority. It allows us greater access to the resources of the group whether that is food, shelter, the warmest corner of the cave or mating with the most desirable member. So strong is the need to gain social status that "people attempt to make favorable impressions on others in order to gain approval and status" (Robins & John, 1997, p.662), and the ability to manipulate the perception others have of them is succinctly summed up here: "*The image of myself which I try to create in my own mind...is different from the image which I try to create in the minds of others in order that they may love me*" (Auden, p.105 in Snyder, 1987).

The manipulation of our image is crucial to how others perceive us, and the reputation we gain. The term "getting ahead" implies attempts to outmanoeuvre, outdo, surpass, climb up the career ladder and prosper, all of which indicate that the individual will be looking after themselves rather than considering the needs of others, and lacking in what Adler termed social interest. Hence, the conflicting nature of our need to get on

with others and, at the same time, to become superior in status to them (Adler, 1927:1979). People who get ahead often do "so at the expensive of getting along" with other people (Rauthmann & Kolar, 2013, p.582), and often, leave a trail of damaging relationships and "toxic and destructive trajectories" (Rauthmann & Kolar, 2013, p.582) in their wake, resulting in loss of trust, with damaging repercussions for that individual's reputation, and their group's survival (Crandall, 1981; Hogan & Hogan, 2009; Rauthmann & Kolar, 2013).

Jones, et al. (1997) state that " human groups are stratified according to status and power" (p.466), and these qualities positively enhance the potential for mate selection, health and survival. But therein lies the tension between GAL and GAH. Whereas GAL with others needs sharing, trust, friendliness and co-operation, the aspects required for GAH such as status and power "often depend on ambition, competitiveness and cunning" (Jones et al., 1997, p.466), qualities which are not conducive to developing relationships with colleagues. Moreover, the qualities that assist an individual to get ahead, such as charm, confidence and enthusiasm, can become overdeveloped resulting in manipulation, arrogance and frustration (Hogan & Hogan, 2009), so the tension between the two needs can cause problems for the individual, manifesting in conflict at work. This argument is developed in Chapter 9 which will show how certain personality traits can have a detrimental effect on an individual's career success. Having outlined the two primary needs manifest in social situations, the third aspect of ST, that of FM, will be considered.

2.6 Purpose – Finding Meaning (FM)

The literature on workplace success emphasises GAH and GAL rather than FM, (Hogan, Johnson, & Briggs, 1997; Kellett, Humphrey, & Sleeth, 2006; Avolio & Locke, 2002; Judge et al., 2009), and includes research into areas such as conscientiousness vs leadership emergence (Marinova, Moon, & Kamdar, 2013), empathy vs task focus (Kellett et al., 2006), self-interest vs collaboration and helpfulness (Avolio & Locke, 2002) and co-operation vs selfishness (Judge et al., 2009). Nevertheless, ST asserts that a third driver compels us to make sense of our lives, and to find purpose and

meaning in how we live (Hogan, 1975). This need is driven by the search for predictability and order, due to a fear of "chaos, randomness and unpleasant surprises" (Hogan & Shelton, 1998, p.130; Horney, 1937). So strong is this search for meaning that all societies contain some form of religion within them, or at least a formal system of ritual and meaning which allows people to express this (Boehm, 1999; Wade, 2006; 2009). The search for meaning is regarded as the most fundamental, powerful and driving force for many human beings (Frankl, 2006), often overriding that of getting on with others, or seeking status and material rewards through getting ahead. Meaning gives a sense of purpose which in a group, helps to build social cohesion (Adler, 1979; Adler & Fagley, 2005), and it has been found that purpose is linked to appreciation, which enhances feelings of well-being, life satisfaction, personal relationships and a sense of general well-being and peace of mind (Fredrickson, 2004; Adler & Fagley, 2005; Wood, Joseph, & Maltby, 2009; Sansone & Sansone, 2010). A sense of purpose, therefore, is influential in how people behave at work, and how they achieve success.

ST argues that finding meaning (FM) is as important a need as GAH and GAL, despite the lack of psychological research to fully support it. FM may be import, and derives in apart from the inclusion of psychodynamic theory into ST, but whether it is a major factor in success at work is something which will be considered in Chapter 10. Personal reflections, such as Frankl's, for example, show meaning and purpose to be the primary driving force to survive, though the usefulness in an organisational context may be less so. Rather than focussing solely on meanings, Holland's Vocational Choice model (1985), shows the relationship between individual preferences and values, and career choice and success, as discussed above in relation to identity and values.

2.7 Socioanalytic Theory: Application at Work

ST states that personality consists of two components, identity and reputation (Hogan & Smither, 2001). Identity is the 'us' that we know (Hogan, 1982), and explains our inner drives and motivations, guides our social behaviour, and determines which roles we shall assume in a social setting; reputation is the 'me' that others see, it is how our behaviour is judged by people who observe us in a social situation (Hogan, 1982; Hogan

& Smither, 2001; Hogan & Holland, 2003), and is what is measured against the FFM. Thus, reputation is important for career success. ST argues that we relate to others in groups through our identity, manifest in social roles and self-presentations. Hogan & Foster (2016) state that we "describe and predict other's behaviours using trait terms, but we should explain their behaviour in terms of their intentions" (p.38), combining the ST aspects of identity and reputation. It is these two aspects of personality that the HPI and the MVPI measure and which seek to indicate how best someone will perform at work (Hogan & Smither, 2001; Hogan & Holland, 2003).

Criticisms against reputation being part of an individual personality (most notably Allport, 1961) are acknowledged, but dismissed, by Socioanalytic theorists (Hogan & Hogan, 2007; Hogan & Holland, 2003; Hogan & Shelton, 1998), who point to the highly regarded and well defined taxonomy of reputation, the Five-Factor Model of Personality (FFM: Digman, 1990; Wiggins, 1996). The FFM is, despite criticisms which are considered below, a robust classic model, highly respected and seen as the most rigorous model to explain, in general terms, how individuals differ in personality. Personality is defined "in terms of motivation, identity and reputation as opposed to traits" (Hogan & Shelton, 1998, p.129), and while ST sees traits as descriptors "and descriptors are not explanation" (Hogan & Shelton, 1998 p.130) the theory acknowledges that reputation is encoded in trait terms and used to describe individual differences. For instance, when we describe someone we tend to refer to them in personality trait terms such as friendly, shy, aggressive, funny and anxious. We do not usually say so-and-so stands upright, he talks very fast, he is descriptive in his speech and he makes lots of notes when at meetings.

2.8 Application of personality theory at work

Personality theory is essential for organisations in understanding how an individual might best fit into a particular type of work and achieve success within that (Biersner & Hogan, 1984; Eysenck & Eysenck, 1976, 1985; Furnham & Heaven, 1999; Holland, 1985; Hogan & Holland, 2003; Jessup & Jessup, 1971), and many areas of personality psychology and its application have been referred to in Chapter 1. When considering

the best fit of an individual with a particular role, Holland designed a model (see Figure 2.1) matching individual differences of personality, values and preferences to different careers (Holland, 1985), and he argued that matching the personality of the individual with the most suitable career paths can ensure greater career success (Holland, 1966; 1985). Additionally, the link between personality, emotional stability and occupational success has been widely studied, with several research reports demonstrating the strong connection (Barrick & Mount, 2005; Furnham & Heaven, 1999; Hogan & Hogan, 1997; Widiger, Trull, Clarkin, Sanderson, & Costa, 2004).

Research using the HPI to assess for potential workplace performance in fire fighters (Kusch, Moser, & Kassner, 2012) found Adjustment and Prudence are key to good performance ratings, and Adjustment to be the single best predictor of overall performance in Station Managers (Kusch, Moser, & Kassner, 2012). Adjustment and Prudence may also result in higher supervisor ratings, for a well-adjusted, conscientious individual is easier to work with than an anxious, unreliable moody individual (Chamorro-Premuzic, 2012). Research found that Adjustment, Conscientiousness and Agreeableness predicted GAL, and such people were seen as stable, reliable and pleasant to work with (Hogan & Holland, 2003; Chamorro-Premuzic, 2012). In the Hogan and Holland study (2003) GAH included Adjustment, Extraversion, Ambition and Openness (Hogan & Holland, 2003), and the importance of emotional stability, shown to be a significant factor in both profiles, will be discussed later on in this thesis.

Given the importance of emotional stability in emergency situations, it is not surprising to find many research studies which have been conducted with flight crew (Cattell et al., 1970; Jessup & Jessup, 1971; Furnham, 1991; Chidester, Helmreich, Gregorich, & Geis, 1991). One such study demonstrated a clear link with personality traits, emotionality and career success (Jessup & Jessup, 1971). Studies on trainee pilots using the Eysenck Personality Inventory (EPI), found that success on training programmes was directly related to individual differences of emotional adjustment. Results showed that 60% of neurotic introverts failed their training; 37% of neurotic extraverts failed; 32% of stable extraverts failed and only 14% of stable introverts failed (Jessup & Jessup, 1971). Studies with cabin crew also found that emotional stability indicated career success, as cabin crew with high levels of emotional adjustment were able to withstand stress more easily, and deal with difficult people and situations more effectively than

those with lower levels of adjustment (Cattell, Eber, & Tatsuoka, 1970). Interestingly but not surprisingly, most airlines recruit stable introverts for their flight crew, and stable extroverts for their cabin crew, a factor that those of us who enjoy flying might take some comfort from (Jessup & Jessup, 1971). Further studies found accident rates correlate significantly with the Captain's personality and emotionality (Chidester et al., 1991). Emotional stability has been shown to be a key factor in both GAH and GAL (Hogan & Hogan, 1992), and few organisations purposefully "seek to hire individuals who are anxious, hostile, personally insecure and depressed" (Barrick & Mount, 2005, p.359).

2.9 Person-Environment Fit Theory

While personality is important to performance, studies have found that performance is also affected by job characteristics, and the environment in which an individual works (Hackman & Oldman, 1980), areas not usually assessed by personality measures, but addressed by the P-E Fit theory. This theory states that the similarity between the person, and the social environment, including colleagues, company culture and vocational choice, is key to performance (Chatman, 1989; Holland, 1997; Meglino, Ravlin, & Adkins, 1989; 1992; Schneider, 1987). P-E Fit theory addresses the different levels of environmental factors such as how well someone fits in with their immediate supervisor, their team colleagues, the job itself, or the organisation, all of which are seen to influence how well someone succeeds (Caplan, 1987; Dawis, 1992; French, Rodgers, & Cobb, 1974; Kristof-Brown, Zimmerman, & Johnson, 2005; Kristof-Brown & Guay, 2011; Meglino, Ravlin, & Adkins, 1992; Muchinsky & Monahan, 1987; Ostroff & Schulte, 2007; Piasentin & Chapman, 2007).

A meta-analysis of P–E fit theories by Edwards (2008), confirmed the importance of this "core concept in research on job satisfaction" (p.168) which was related to stress at work (French, Caplan, & Harrison, 1982; McGrath, 1976), recruitment and selection (Breaugh, 1992; Wanous, 1992; Werbel & Gilliland, 1999), vocational choice (Dawis & Lofquist, 1984; Holland, 1997), reduced turnover and higher citizenship behaviours (Andrews, Baker, & Hunt, 2010) and organisational culture (Chatman, 1989; Meglino et al., 1989). Further, the needs of the person in tandem with the environment (Dawis

& Lofquist, 1984; Porter & Lawler, 1968) and individual abilities of the person and conjunction with environmental demands (McGrath, 1976; Sells, 1970; Shirom, 1982) were found to be related to P-E fit (Edwards, 2008).

P-E fit theory addresses several layers of fit, including: Person-Job fit, which is the compatibility between an individual's characteristics and the job (Kristof-Brown & Guay, 2011; Ployhart, Schneider, & Schmitt, 2006) as well as between levels of stress and job (Locke, 1969, 1976); Person–Group fit, which is the compatibility between an individual and their colleagues in achieving group outcomes (Boone & Hartog, 2011); Person–Person fit is the compatibility between people with similar values and attitudes (Van Vianen, 2000), particularly between person–supervisor which indicates work satisfaction (Boone & Hartog, 2011) and lastly; Person–Organization fit which refers to the compatibility between people and the organizations and reflects similar values between each, resulting in an increase in trust and citizenship, and organisational commitment (Andrews et al., 2010; Boone & Hartog, 2011).

Due to its important implications in the workplace, P-E fit has maintained a prominent position in industrial and organisational psychology (see Edwards, 2008) and argues for the fit between 'persons' and environmental factors to be considered in tandem. Nevertheless, it is argued here that the focus in P-E Fit theory is on environmental factors, in tandem with 'the person' with little consideration given to personality and individual differences. Most of the research articles cited above refer to 'the person', not to any particular personality traits, and indicate that what an individual brings to the situation matters less than what the environmental factors contribute. This is a valid point and would make for a worthwile discussion, and certainly points to valuable future research but is not the focus on this PhD. This thesis is investigating individual differences of personality and is investigating how far these differences, in accordance with ST, can be found within two psychometric measures. Rich as the topic of P-E fit is, and its contribution to understanding performance at work generally, it is not the focus, nor within the scope of this PhD, to include it in more depth here.

Nevertheless, the importance to understanding individual differences and performance is acknowledged by Holland's theory of person-environment fit which emphasises values and job-fit (1985) and addresses the importance of the work environment for the

individual, highlighting how values and personality match career choices. This is built on by ST theory, outlined earlier, which includes personality, values, preferences and motivational drives of the individual.

ST states that we have evolved to live and work in groups, and within those groups we seek to attain acceptance and love (GAL), status and power (GAH), and to find purpose and meaning (FM). How we manage this is through our identity which will drive us to achieve these goals, as well as the way we manage ourselves when with others, thus gaining a reputation amongst the groups in which we live and work. The drive for meaning emerges out of both our interactions with others and the roles we seek out in order to satisfy a need for purpose. This accords with Holland's work on values and careers (Holland, 1966; 1973), outlined above, which demonstrated how individuals seek work which suits their personality, matches their values and gives them meaning and which guides individuals to particular career preferences (Furnham, Hyde, & Trickey, 2013a). The next chapter will investigate which certain factors of personality form GAH, GAL and FM and how far this will relate to workplace success.

Chapter 3: Higher Order Factors of Reputation and Identity

3.1 Introduction

In the last chapter, ST was introduced and an explanation of how three key drivers, GAH, GAL and FM influence individual behaviour in social settings. This chapter looks more fully at personality according to ST, it demonstrates how the HPI and the MVPI relate to the Big Five Factors, and the Five Factor Model of Personality, and it outlines the current research on higher order factors of personality.

How we interact with others has a significant impact on how we are perceived, and on what forms our reputation (Cooley, 1902; Goffman, 1959; Hogan, 1976; LaRossa & Reitzes, 1993; Mead, 1934). Adler stressed the need for social interest which is advantageous to others as well as ourselves, resulting in psychological health and meaningful relationships (Adler, 1927). These have implications for how we are assessed at work, whether for recruitment, development, training or for culture fit. Current measures of personality assessment tend to use self-report measures which focuses on the insider view, whereas it is reputation, personality as observed by others, that is more valuable (Hogan, 1983; Hogan & Hogan, 1997; Hogan & Smither, 2001). This calls into question the dichotomy between identity and reputation.

In Socioanalytic terms, personality comprises both reputation *and* identity (Hogan & Smither, 2001), a concept particular to the ST of Hogan (1982). Our reputation, however, is predicated upon trait terms which are used to describe behaviours. Trait terms are useful descriptors of responses and behaviours, but it is not possible to explain personality merely in trait terms, nor just by observation. People are more than their actions and more than descriptor terms such as extravert, agreeable, neurotic etc. We are, therefore, both the person that we know ourselves to be, as well as the 'me' that others see (Hogan, 1976).

Furthermore, the person we know ourselves to be is aligned to our identity and values, and thus is a key factor of how we live our lives, where our values underpin our choices, our relationships and the way we work with others. For any theory of personality there needs to be a consideration of these dual elements of personality, otherwise we shall have a very one-sided view of who someone is: what they tell us they are, or merely what we interpret their behaviours to be. This needs emphasising, as the Socioanalytic view of personality does not really equate to the term *personality* commonly used in psychology. When personality is referred to in this thesis it includes both these elements: the reputation and the identity of the individual.

Our identity includes insider aspects such as attitudes, feelings, thoughts and values with which we shape our view of ourselves and the world, and it is hard for others to access this in order to form a judgement of us. Our behaviour, however, and our speech, are all accessible to others and it is these which shape their view of us (Hogan, 1982; Hogan & Smither, 2001; Hogan & Holland, 2003; Hogan & Ones 1997). Hogan and Fico (2011) argue that the way we see ourselves is often at odds with how others see us, and recent research into observer ratings considers their use in personality assessment. Both methods were used in this research, and some of the criticisms related to the use of them will be discussed now.

3.2 Observer Ratings vs. Self-Ratings

In a meta-analytic study Connelly & Ones (2010) point to extensive research in the observer/personality accuracy field, and argue that the accuracy of observer ratings has been at the core of such debate. Personality measures are based on self-report measures and may be less accurate, and offer less predictive validity of work performance, than observer ratings. Rather than requiring people to complete self-rated personality questionnaires, or even ask colleagues to complete one on them, some researchers suggest that outsiders can offer a more accurate and reliable assessment and it should be observers, rather than the individuals, who rate behaviour and performance (Connelly & Hulsheger, 2012) as "the data are quite clear that people are poor judges of how they are seen by others" (Hogan, 2005, p.336). Observers, it is argued, are

objective and rate the performance rather than the person (Connelly & Hulsheger, 2012). People who rated themselves highly on key personality traits such as Agreeableness or Conscientiousness were rated as performing much worse in their job by objective observers (Connelly & Hulsheger, 2012; Funder, 1995; Connelly & Ones, 2010; Funder & Sneed, 1993; Hogan & Shelton, 1998; Furnham, 1986), although as will be seen later, Agreeableness does not relate to performance at all. There are many areas which impact on self-ratings: for instance, we explain our behaviour to ourselves, we excuse particular responses and importantly, those higher on narcissistic traits will enhance their presentation of themselves even to themselves, in order to protect their self-image (Connelly & Hulsheger, 2012).

In one study, ratings were conducted using trait terms such as emotional stability, conscientiousness, agreeableness and results show that observers have a 'clearer lens' when looking at personality traits, meaning that there is less prior knowledge with which to colour their observations (Connelly & Hulshegar, 2012). Interestingly, if counter-intuitively, strangers' perceptions of an individual's traits seemingly predicted behaviours in a similar or more accurate way than close acquaintances' if based on the same criteria (Funder & Sneed, 1993). Nevertheless, it is regarded as mistaken to "confuse the way we use trait words with trait theory. Trait words are indispensable for describing other people: 'that person is intelligent, kind, irritable, anxious, friendly' but people don't have 'traits', rather, we assign trait terms as a way of summarising recurring themes in individual behaviour, although there is a difference between description and explanation, and trait theorists ignore the disinction" (Hogan, 2005, p.335). Accuracy is enhanced when describing traits which are easily observed such as Conscientiousness, Extraversion and Agreeableness, and less so when describing traits related to Openness and Emotional Adjustment, both of which have been found to be important factors of identity. If observable traits are the most noted when assessing others, people can learn to 'act the part' particularly when being observed, such as at an assessment centre, and this is a criticism of observer ratings.

The way an observer rates an individual's performance has implications for the way someone is assessed, not only at initial selections, but also throughout their career in terms of performance appraisal and promotional development, both of which depend on the reputation of the individual, as much as observation (Cook, 2009). If, as been

argued, performance appraisals reflect how rewarding an individual is for their supervisor, and not necessarily how well they do their job, then it is fair to assume that the traits a supervisor is rating, are those which are visible, clearly rated and pleasing to the supervisor. Observer ratings, including those from family, friends, peers and strangers indicate that there is a strong correlation between what the observer sees in the individual and how they will act, thus linking personality to future behaviour (Connelly & Ones, 2010). A major criticism of this, however, is that the better someone gets to know the person they are supposedly rating, the less objective they are, and excuses can be made for performance (Woods & Hardy, 2012).

Research shows that some traits are easier to report than others (John & Robins, 1993; Funder, 1995; Zillig, Hemenover, & Dienstbier, 2002). High visibility traits include Extraversion, Conscientiousness and Agreeableness, as it is easy to see if someone is energetic, sociable, outgoing, reliable, punctual, co-operative and pleasing to work with. Low visibility traits include internal thoughts and feelings, related to emotional stability (N) and Openness to Experience (O) and are harder to both observe, and describe, accurately (Zillig et al., 2002). While many studies found support for the validity of observer ratings (Oh, Wang, & Mount, 2011; Shyamsunder & Barney, 2012), which seems to support the ST that it is our reputation others assess, there is a call for further investigation into this (Oh et al., 2011). Supervisors who were asked to rate performance on a forced choice criteria such as a Likert scale, where behaviours were rated as 'most liked' and 'least liked' rather than a trait measure, when rating specific performance tasks, resulted in an increased validity in the ratings and reduced their general leniency by as much as 50% (Bartram, 2007).

Despite the call for the superiority of observer ratings, arguments against them include their lack of reliable or valid measures for performance, as they do not take into account individual motives and values (Funder & Sneed, 1993; Chamorro-Premuzic 2007; Cook, 2009; Woods & Hardy, 2012), all of which are seen as key to performance. Hogan & Holland's study (2003) included the HPI, but not the MVPI and therefore excludes values or motives, which are less observable than reputational personality factors (Chamorro-Premuzic, 2007). If values and motives are key to personality and to how we get ahead and get along, a consideration of internal factors as measured by the MVPI must be included. Srivastava (2010), argued that the FFM is only a measure of how we

see others, and that observers can miss out on human qualities not easily seen (Paunonen & Jackson, 2000), rating only measurable, social roles (Funder & Sneed, 1993).

Further, Cook (2009), argues that the low correlation between supervisor ratings and performance criteria (0.39) is that the supervisor's rating and the performance criteria are actually measuring quite different things (Cook, 2009), and which may mean missing internal aspects of personality too. The personal preferences of the supervisor for different employees can impact on their ratings, and there is a tendency towards generosity when "leniency is a big problem in validation research because it reduces validity coefficients" (Cook, 2009, p.241.) For example, an individual is more likely to be highly rated by their manager if they can minimise the workload for their supervisor, get things done on time and in the way the supervisor wants, is easy to work with and is compliant enough to do what the managers wants (Chamorro-Premuzic, March 24, 2012). Highly rated traits such as extraversion and sociability indicate someone who is easy to be with and implies a level of emotional maturity that negates many neurotic traits. These social skills are particularly helpful in the development of relationships with others at work and it is not surprising that supervisors prize such qualities.

The strengths of each method, self-report and observer ratings, and their limitations, suggest that either could be used for the studies in this thesis. The first two studies included supervisor ratings, and a decision was made that the most appropriate method for performance data collection for the next three studies was self-assessment of performance. Self-reports are the most common method of data collection when assessing personality, and it was seen that asking participants to rate their performance on clear criteria based performance was in line with this. Furthermore, the potential to gather subjective data from supervisors, chosen due to personal preferences, was seen as lacking in objectivity and would skew the performance data (Woods & Hardy, 2012). An overriding factor in choosing self-assessment for the last three studies was the current work patterns of many individuals who are often distanced for direct supervision, through flexible or remote working, and even working in different countries, as well as the fact that supervisor ratings are not always available or appropriate. The advantages and disadvantages to both observer and self-ratings will be discussed more fully in Chapter 10, and some recommendations for methodology in future research will be considered.

Nevertheless, despite supervisor ratings not being the most reliable of methods, they are the most commonly used method for appraisal. They also have some validity in that they are one person's perception of another at work, albeit possibly a flawed perception. A way to redress this is by using multi-rater observations. Research has shown that personality is better measured using multiple sources (Oh et al., 2011; Shyamsunder & Barney, 2012), and feedback from sources such as a supervisor, peers, subordinates, customers and others, in addition to self-reports is shown to be effective in measuring leadership performance and behaviours (Shyamsunder & Barney, 2012; Smither & London, 2009). This is discussed in Chapter 10 as a consideration for future studies.

One way to measure how we are seen by others is through our performance at work, and a study by Hogan and Holland (2003) attempted to do this. Hogan and Holland (2003) investigated the claim that when "performance criteria are classified in terms of getting along and getting ahead, a more nuanced pattern of personality-performance links would emerge" (Hogan & Holland, 2003, p.102). In their study, it was predicted that GAL would require emotional stability, Conscientiousness and Agreeableness; whereas GAH would require emotional stability, Extraversion and Openness. As Hogan and Holland (2003) point out, the "correlations between predictor variables and criterion data steadily increase as the criterion data become more specific…this finding should inform subsequent research on this topic." (Hogan & Holland, 2003, p.109). They argued that aligning predictor variables - in this study the HPI scales - with performance criteria by supervisor ratings would offer a valid measure of personality. In Hogan and Holland's study (2003), the GAL scale was predicted by Adjustment (.34), Prudence (.31), and Likeability (.23). The GAH scale was predicted by Ambition (.26), Adjustment (.22) and Prudence (.20). In neither profile did Sociability show any significance, though Likeability was important in getting along with others. Adjustment, Prudence and Ambition were all found to be valid predictors for GAH and GAL.

While previous research showed that clear performance criteria, matched against personality scales, are useful predictors to show a GAH and GAL profile, only the HPI, a measure of reputation, was used to do so (Hogan & Holland, 2003). Reputation has been shown to be significantly correlated to the respected and widely accepted Five Factor Model which is based on observer ratings (Wiggins, 1996; Hogan & Fico, 2011),

and it is these terms which are used to describe people. A consideration of how the FFM relates to the ST of reputation/identity will be considered next.

3.3 The Five-Factor Model (Costa & McCrae, 1992a; Wiggins & Pincus, 1992)

The Five Factor Model, (FFM: Costa & McCrae, 1992a), is accepted as the most valid, robust and comprehensive model to explain personality differences (Wiggins & Pincus, 1992; Soldz & Vaillant, 1999; Funder, 2001; Hogan & Hogan, 2007; Chamorro-Premuzic & Furnham, 2010). The five factors are: Neuroticism, (being anxious, irritable, worried, moody, angry and hostile); Extraversion, (being talkative, outgoing, sociable, responsible, gregarious and engaging); Openness, (being creative, original, open to new ideas, and intellectually curious); Conscientiousness, (being reliable, punctual, dependable, systematic and organised); and Agreeableness, (being helpful, trusting, kind, sensitive and warm to others, and able to compromise) (Costa & McCrae, 1997).

While the FFM is criticised for its lack of clarity in its measurements (Block, 2010), its "theoretical rationale" (Chamorro-Premuzic, 2007, p.25) and a lack of breadth in scales (Paunonen & Jackson, 2000), the model has been widely recognised by differential psychologists as showing sufficient empirical evidence to support the identification of the Big Five as the major dimensions of personality (Funder, 2001). The FFM has provided occupational and industrial/organisational researchers with a universal language to compare the results from different validity studies which often use diverse terminology (Chamorro-Premuzic & Furnham, 2010). Further, and despite its limitations (discussed in section 3.3.2), the FFM has contributed significantly to the understanding and assessment as to how personality differences could predict work performance. Importantly, the five factor model is based on how others see us, and allocates descriptive trait names to observed behaviours, rather than on underlying innate characteristics (Chamorro-Premuzic, 2007).

3.3.1 Five Major Dimensions of Personality

The five factors from the FFM were derived after a meta-analysis of many personality factors, and the descriptions of each are taken from self-reports and peer reports on personality, ensuring as comprehensive a lexicon as possible. People measure along a dimension of each factor, rather than the measures demonstrating a particular type, and the factors are seen to be stable over a lifetime (Soldz & Vaillant, 1999). Importantly for ST, all five factors were of adaptive value in a prehistoric environment, suited to both the external environment and close, social group living (Buss, 1997). Goldberg's analysis (1993) found 5 higher order factors, which he termed The Big 5, and which are related to socially relevant situations, whereas the FFM are seen as genetic traits triggered by the environment (McCrae & Costa, 1992a). The subtle differences between two empirically related, yet conceptually distinct models, the Big Five and the five-factor model, are summarised in Table 3.1 below.

Table 3.1 *The Five Factor Model (FFM) and The Big 5 (B5)*

Five Factor Model (FFM) Costa and McCrae (1992a)	Big 5 (B5) Goldberg (1993)
FFM factors are *genetic* traits triggered by context; traits are universal	Big 5 factors most *socially* relevant which are used to describe people
Factor names:	Factor names:
Extraversion	Surgency
Agreeableness	Agreeableness
Conscientiousness	Conscientiousness
Neuroticism	Emotional stability
Openness to Experience	Intellect

Adapted from Costa & McCrae, 1992a; Goldberg, 1993

A consideration of the criticisms of the FFM is important, as the FFM is universally used by personality psychologists, underpins many psychometric personality measures, and is assumed to relate directly to personality traits. The FFM is effectively a measure of how others see us, and is, therefore a measure of reputation. It has almost 60 years of factor analytic research supporting its use in personality measurement, based on peer

ratings, and it is the descriptions of people according to the FFM (Hogan & Hogan 1992) which underpin the HPI, also relating to reputation.

A table showing the taxonomies of individual differences in personality can be seen in Table 3.2 below. This table shows how particular personality factors relate to workplace performance outcomes.

Table 3.2 *Dynamics of Personality and Career Success: The Big Picture*

Individual Differences in Personality							
			Taxonomies				
Universals Of Human Societies	Universal Human Needs	Universal Stressors	HPI	FFM	Digman	Career Implications	Workplace Performance Criteria
Living in Groups	Social Acceptance Approval Getting Along (GAL)	Rejection	Adjustment Interpersonal Sensitivity Sociability Prudence	Agreeableness Neuroticism Conscientious-ness	Alpha	Rewarding to deal with, pleasant to work with.	Positive Supervisor Ratings (subjective performance)
Hierarchical Groups with a Leader	Status Power Control (GAH)	Loss of Status and Control	Ambition	n/a	n/a	Action Driven and Dynamic	Productivity (objective performance)
A sense of Meaning and Purpose. A unifying Belief i.e. Religion	Sense of Order, Structure, Higher Purpose Predictable (FM)	Uncertainty Nihilism Purposeless Chaos	Inquisitive Learning Approach	Extraversion Openness	Beta	Shares Organizational Values	Person-Environment Fit (Engagement Surveys)

Adapted from Hogan & Chamorro-Premuzic (2015a)

Most personality inventories can be described in terms of the FFM (Wiggins & Pincus, 1992) and it is this which has facilitated the FFM becoming "the paradigm for modern research in personality assessment" (Hogan & Hogan, 2007, HPI manual p.7). It might be useful to consider the relationship between the FFM and the HPI and these are outlined below (see Table 3.3) and which shows Extraversion comprising two facets on the HPI: Ambition and Sociability; and Openness comprises two facets on the HPI: Intellectance and School Success.

Table 3.3 *Correlations between dimensions of the FFM (Costa & McCrae, 1992a) and the HPI (Hogan & Hogan, 2007)*

FFM	HPI	Correlation
Neuroticism	Adjustment	.73
Extraversion	Ambition	.56
Extraversion	Sociability	.62
Agreeableness	Likeability	.50
Conscientiousness	Prudence	.51
Openness	Intellectance	.57
Openness	School Success	.30

Adapted from Hogan & Holland (2003)

The strength of the FFM is that it is based on how others describe us and "concerns the structure of reputation and because reputation is based on social consensus regarding trends in a person's behaviour" (Hogan & Hogan, 2007, p.8). Moreover, "it is a systematic method for classifying individual differences in social behaviour" (Hogan & Hogan, 2007, p.7). The importance of explaining fully the FFM and its relevance is that it underpins most psychometric personality measures where "nearly all personality-relevant adjectives can be subsumed under the Big Five (Saucier & Goldberg, 1998). An examination of the internal higher-order structures of five personality measurements - the HPI, the Occupational Personality Questionnaire, Cattell's 16PF, the Personality and Preferences Inventory and Profile Match - indicated that factor analyses of the factors within each measurement revealed a variant of the Big Five model underpinning them (Woods & Hardy, 2012). Despite the widespread acknowledgment of its validity

and usefulness, however, there are some valid criticisms of the model, notably by Block (1965:2010), which are considered now.

3.3.2 Criticisms of the Five Factor Model (FFM)

A consideration of the criticisms of the FFM is important, as the FFM is universally used by personality psychologists, underpins many psychometric personality measures, and is assumed to relate directly to personality traits. The FFM is effectively a measure of how others see us, and is, therefore a measure of reputation.

The FFM, regarded as the underpinning theory of personality traits, is in fact measuring "*dimensions of perceived personality*" only (Saucier & Goldberg 1996, p.42: emphasis in original), and has been accorded a status amongst personality psychologists that may not be merited (Block, 1965; 2010). Block argued that there are many ways to measure personality and many factors which explain personality other than the FFM, referring to life events and social influences which would impact on the way someone behaved. Block argued that a consideration of factors other than 'traits' would help with our understanding of personality generally (Block, 2010), and that all other aspects of psychology (cognitive, developmental, biological) were important only so far as they informed our understanding of the individual (Funder, November, 2011). Srivastava queries whether many personality psychologists have forgotten that "the Five-Factor Model is, first and foremost, a model of social perception" (Srivastava, 2010, p.69), and that personality measurement is really a measure of the perception of the person, whether self-perception of perception of others (Saucier & Goldberg, 1996; Srivastava, 2010).

Block's main criticism of the FFM was its lack of underpinning theory of the five factors, which he said had 'cloudy' measurements. For example, "Openness was insufficiently represented by single word descriptors" (Block, 2010, p.3) which fail to address the richness of personality differences and notes "it is difficult to come up with single words or short phrases that adequately capture the breadth of the five factors" (Block, 2010, p.13). Openness is more comprehensively addressed by the HPI's descriptors which include Science Ability, Curiosity, Thrill Seeking, Intellectual Games, Generates Ideas and Culture and which give a more nuanced description of someone who is high on

Openness (Hogan & Hogan, 2007). In addition, Block argued that factor analysis was not the only way to understand, or explain personality, and that referring to the FFM as the key paradigm upon which many personality tests are based, gave the model undue regard amongst personality psychologists (Block, 1965; 2010). Indeed, most researchers continue to define personality as traits, which "confuses description with explanation, and is, therefore, completely tautological" (Hogan, 2005, p.334).

Other criticisms include the fact that many aspects of being human are missing. For instance, there are no measures for Religiosity, Honesty, Deceptiveness, Conservativeness, Conceit, Thrift, Humorousness, Sensuality, and Masculinity-Femininity (Paunonen & Jackson, 2000) all of which, arguably, influence how others see us, and how we perceive ourselves. While the FFM is a valuable model, the criticism that many important personality traits are not accounted for may be justified.

While there have been many attempts to categorise people under personality terms, including those investigating higher order factors of personality, there have been few which look at higher order factors of reputation, and even those arguably still within the personality domain. Moreover, so far there have been none which look at higher order factors of reputation and identity. This research will investigate, for the first time, whether such higher order factors exist within the HPI and the MVPI. An outline of the research into higher order factors generally which will be discussed next, and its relevance to the investigation into higher order factors of reputation and identity.

3.4 Higher Order Factors of Personality

There is a precedent for condensing many factors of one individual difference, such as intelligence, into smaller and smaller units in an ever increasing attempt to find an all-encompassing explanation for that difference, such as the general factor of intelligence (g) and to simplify the understanding and measurement of intelligence. The search for a general factor of personality, has shown to be an increasing area of research over the last few years, with a continued reduction into fewer and fewer factors, from sixteen (Cattell's, 1957; 1973), to seven, (Hogan & Hogan, 1992; 1997), to five (Costa &

McCrae, 1992a), to three (Eysenck, 1992) and finally to two super factors of personality (DeYoung, 2006; DeYoung, Peterson, & Higgins, 2002; Digman, 1997). There is currently much debate on whether there is a general factor of personality, GFP, much like the general factor of intelligence (*g*).

Studies show that the five factors of personality are not independent and there is considerable overlap, allowing for a consideration of higher order factors. DeYoung's research (2006) found two higher order factors which were subsequently labelled 'plasticity' and 'stability', a new name for the older concept of two similar factors of alpha and beta (Digman, 1997). DeYoung's factors map onto Digman's in that they both show Neuroticism, Agreeableness and Conscientiousness as one factor, called *alpha* by Digman, (1997) and plasticity by DeYoung (2006), indicating an individual's ability to demonstrate emotional stability, who is curious about the world, and flexible in their behaviour. The second factor included Extraversion and Openness, and was termed *beta* by Digman (1997) and stability by DeYoung, (2006).

There has long been a search for one overriding, simplified, super-factor which helps explain personality and Table 3.4 below summarises the chronological progress of this research over the last 50 years:

Table 3.4 *Higher Order Factors of Reputation (referenced chronologically)*

Author	Date	Reference	H.O.F	Factor names
Eysenck & Eysenck	1976	H. J. Eysenck and S. B. G. Eysenck (1976). *Psychoticism as a Dimension of Personality*. London: Hodder & Stoughton.	3	The PEN Model: Psychoticism, Extraversion, Neuroticism.
Costa & McCrae	1987/ 1992	McCrae, R.R. & Costa, P.T.; Jr. (1987). "Validation of the five-factor model of personality across instruments and observers". *Journal of Personality and Social Psychology* **52** (1): 81 – 90 McCrae, R.R.; John, O.P. (1992). "An introduction to the five-factor model and its applications". *Journal of Personality* **60** (2): 175–215.	5	Neuroticism, Extraversion, Openness, Conscientiousness, Agreeableness.
Hogan, R. & Hogan, J.	1987/ 1992	Hogan, R., & Hogan, J. (1987/1992) The Hogan Personality Inventory Manual.	7	Adjustment, Ambition, Sociability, Interpersonal Sensitivity, Prudence, Inquisitiveness, Learning Approach.
Block, J.	1995	A contrarian view of the five-factor approach to personality description. *Psychological Bulletin.* Vol 117 (2), Mar 1995, 187-215.	2	Ego-Resilience, Ego-Control.
Wiggin, J.S. & Trapnell, P.D.	1996	Wiggins, J. S., & Trapnell, P. D. (1996). A dyadic-interactional perspective on the Five-Factor Model. In J.S. Wiggins (ed.) *The Five-Factor Model of Personality: Theoretical Perspectives* (pp. 88-162). New York, NY: Guilford.	2	Agency and communion

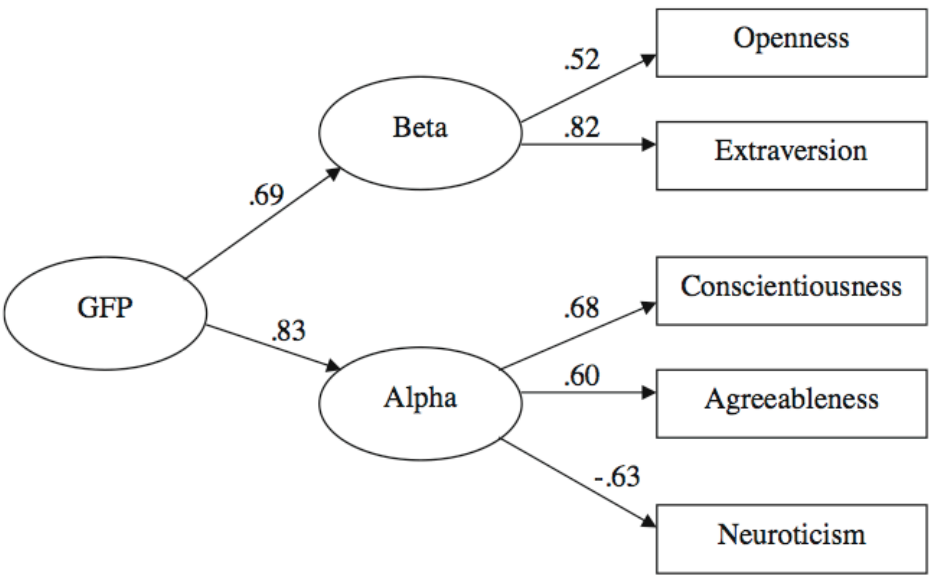
Digman.J.M.	1997	Digman J.M. (1997) Higher-order factors of the Big Five. *Journal of Personality and Social Psychology* 1997; 73:1246–1256. (PubMed: 9418278).	2	Alpha, Beta.
DeYoung, C.G, Peterson, J.B., & Higgins, D.M.	2002	DeYoung, C. G., Peterson, J. B., & Higgins, D. M.. (2002). Higher-order factors of the Big Five predict conformity: Are there neuroses of health? *Personality and Individual Differences, 33,* 533-552.	2	Stability, Plasticity.
Musek, J.	2007	A general factor of personality: Evidence for the Big One in the five-factor model. *Journal of Research in Personality*, 41 pp. 1213 -1233.	1	General Factor of Personality (GFP).
Rushton, J.P., Bons, T.A., & Hur, Y-M.	2008	Rushton, J. P., Bons, T. A., & Hur, Y-M. (2008). The genetics and evolution of a general factor of personality. *Journal of Research in Personality,* 42, 1136–1149.	1	General Factor of Personality GFP Differential K theory r-k
Ruston, J.P. & Irwing, P.	2011	Rushton, J. P., & Irwing, P. (2011). The General Factor of Personality: Normal and abnormal. In T. Chamorro-Premuzic, S. von Stumm, & A. Furnham (Eds.), The Wiley-Blackwell handbook of individual differences. Hoboken, NJ: Wiley-Blackwell.	1	General Factor of Personality GFP

(Mansi, 2013)

3.5 The General Factor of Personality

The timeline in Table 3.4 shows how the search for a simplified, overriding factor of personality has gained momentum over the last 50 years. The idea that there might be a general factor to explain personality, a term first coined by Hofstee who referred to the *p* factor of personality as the 'Primordial One' (Hofstee, 2001), was first brought to wider attention by Musek (2007), though originally considered by Rushton (1985). The general factor of personality (GFP) refers to a cluster of factors that together are seen as highly desirable and indicative of success, both at work and in one's life generally, particularly in finding a mate. The GFP suggests that "on self-reported questionnaire responses, openness and extraversion tend to go together, and that conscientiousness, agreeableness, and emotional stability tend to go together" (Fugard, 2010, p.1). The GFP contains two elements called Alpha and Beta, which in turn contain the five factors of personality (see Figure 3.1 below).

Figure 3.1 *The GFP: Correlation Structure of the big 5, huge 2 and general 1*



Fugard, (2010).

Someone high on GFP would be "altruistic, emotionally stable, agreeable, conscientious, extraverted, and intellectually open, with high levels of well-being, satisfaction with life, self-esteem and emotional intelligence" (Rushton & Irwing, 2008,

p.680). Despite a GFP being seen arguably, as the equivalent to science's 'theory of everything', as a theory it falls short of explaining how, and why, people are as they are, and negates any perceived differences or indeed, any similarities (Ferguson, Chamorro-Premuzic, Pickering & Weiss, 2011). People high on the GFP are seen as having a significant social advantage as such traits are usually predictive of social, career and interpersonal success (Rushton & Irwing, 2011). Based on evolutionary theory, the GFP theory argues that such traits are more likely to engender potential mating success than those without them, and therefore, the general factor evolved as an evolutionary advantage (Ruston & Irwing, 2011).

3.5.1 Criticisms of the theory underpinning a GFP

Despite recent research into a GFP and the enthusiasm of its proponents (Rushton, 1985; Musek, 2007; Rushton & Irwing, 2008; Rushton et al., 2008; Erdle, Irwing, Rushton, & Park, 2010; Rushton & Irwing, 2011; van der Linden, Nijenhuis & Bakker, 2010; Templer, 2012), there are some forceful and valid arguments against such a concept (Wood & Brumbaugh, 2009; Revelle & Wilt, 2009a; Revelle & Wilt, 2009b; Ferguson et al., 2011).

Rushton (1995) originally referred to algebraic terminology (in his famous formulae of r-K life history theory, relating to quality vs. quantity of off-spring) to show that there is a preferred higher level of personality traits at one end of a scale, and less desirable, lower order traits at the other and his algebraic influence may explain some of the aridity of the theory. Rushton (1995) equated the development of personality characteristics to different races, allocating general factors to each race, easily measured by the GFP. Rushton sets out his arguments for the social behaviour of varying ethnic groups, stating that 'Blacks' are at the bottom of the ladder and White Caucasians at the top (Rushton, 1995), arguing strongly that it is genetic traits, specifically found in the GFP, rather than any social or cultural influence or group mores, which shape behaviour and thus enhances mate selection.

Rushton's research, and his subsequent theory of GFP, has since been widely discredited. The GFP has been criticised for its seemingly racist overtones (Anderson, 1991; Dobratz, 2000; Fairchild, 1991; Graves, 2002; Sternberg, Grigorenko, & Kidd,

2005) and its one dimensional, simplistic, scale, (Anderson, 1991; Graves, 2002) offering little in the way of social influences and group development as do more social perspectives. Further criticism against a GFP is that a general factor would be acting as a unified unit, with no chance to manifest particular aspects of personality at different times, in different circumstances (Ferguson et al., 2011), or a consideration of cultural differences (Sternberg et al.,, Grigorenkso & Kidd, 2005), and by trying to account for personality in one single factor, however inclusive, the theory lacks persuasion and seems counter intuitive to understanding personality differences (Anderson, 1991; Dobratz, 2000; Fairchild, 1991; Ferguson, Chamorro-Premuzic, Pickering, & Weiss, 2011; Graves, 2002; Revelle & Wilt, 2009a; Revelle & Wilt, 2009b; Sternberg et al., 2005; Wood & Brumbaugh, 2009).

The GFP measures themselves are problematic: "many of the meta-analyses that evaluate the validity of personality have significant limitations. For example, researchers often include in the same analysis measures that are not commensurable. Thus, they combine measures of normal personality with measures of psychopathology and values and interests" (Hogan, 2005, p. 332). Furthermore, researchers often fail to align predictors with criteria and "this results in using measures of conscientiousness to predict service orientation, or measures of extraversion to predict training performance" (Hogan, 2005, p. 332), none of which adds to our understanding of personality. The traits comprising the GFP include outgoing and confident, and seemingly people with such traits would want to present a positive view of themselves to the world, and how well they manage the impression they make on others, often related to social desirability (see Paulhus, 1984; Viswesvaran & Ones, 1999; Li & Bagger, 2006; Ferguson et al., 2011). In contradiction to the high regard some researchers have for the GFP (Templer, 2012; Rushton & Irwing, 2008; Rushton et al., 2008) a recent criticism is that higher scorers on GFP were at risk of being classified as having a personality disorder (Ferguson et al., 2011).

A GFP suggests that a very high score on a scale e.g. high emotional stability (low N) is more desirable than a lower one. While high scores on intelligence may be regarded as something to aspire to, high scores on some personality scales are not necessarily desirable. Indeed, research has shown that despite the GFP arguing for low N, too low a score indicates potential 'glib charm' (Ferguson et al., 2011), a trait often associated

with psychopaths and regarded as a 'maladaptive' personality difference (Widiger & Mullins-Sweatt, 2009; Paulhus & Williams, 2002). All the big five traits, where too high a score is found, correlate with personality disorders, so that high Extraversion is linked to histrionic behaviour (Bagby, Costa, Widiger, Ryder & Marshall, 2005), Openness to eccentricity (Hogan & Hogan, 1997), Conscientiousness to Obsessive-compulsive perfectionism (Costa & McCrae, 1992b; Hogan & Hogan, 1997), Agreeableness to Dependency (Hogan & Hogan, 1997) and, as mentioned above, too low a Neuroticism score would indicate someone completely unaware of their feelings, suggesting elements of psychopathy (Paulhus & Williams, 2002; Hogan & Hogan, 1997).

Generally, high scores on the GFP suggest someone who is "pleasant to have around" (van der Linden, Vreeke, & Muris, 2013, p.367), with lower scores being reflective of someone who is more difficult to get along with. Whether this can be reduced to one simple factor of personality is a moot point, but given the current criticisms a GFP does not seem highly regarded by current personality psychologists. The problems for individuals with too high a score on certain personality traits will be discussed in Chapter 9 when dealing with the over development of personality traits, leading to the dark side of personality. While it is understandable that fewer higher order facets of personality are sought, a GFP is not necessarily going to explain the differences of people, in enough detail to fully understand their behaviour. Nor will it serve as a useful indicator of workplace behaviour as too high a trait may, in fact, be to an individual's disadvantage.

Further, the GFP associates high levels of creative thinking with a desirable personality and yet there is an abundance of research to show that while creativity often benefits society, it rarely benefits the individual, and can be disruptive to group cohesion. For example, high scores on Openness indicate someone who is prone to feelings of loneliness (McCrae, Lockenhoff & Costa, 2005), demonstrates higher levels of Neuroticism (Buss & Barnes, 1986), often feel outsiders (Piedmont, Sherman, Sharman, Dy-Liaco & Williams, 2009), and are frequently perceived as being 'odd' or eccentric by other people (Piedmont et al., 2009; Hogan & Hogan 1997). Indeed, very high levels of Openness can be perceived as Eccentric on the HDS which has implications for losing one's credibility in the workplace (Hogan & Hogan, 1997). Moreover, if as is

argued by the GFP theory, extraversion is seen as such a desirable trait it is not reflected in mate choice. Research found that generally extraverts are not drawn to those high on GFP (Wood & Brumbaugh, 2009) although it might be that two extraverted outgoing, confident individuals would find each other just too exhausting.

Further criticism of the GFP is that it is measuring arbitrary scales, so that in some measures (i.e. Neo-V) Neuroticism is measured and in others Emotional Stability (HPI) both of which relate to different aspects of personality (Revelle & Wilt, 2009a). Further, all scales measure what is seen as socially or behaviourally important on an arbitrary measure and "unfortunately, taking advantage of this arbitrary direction and reverse scoring items can lead to what seems to be a general factor even when there is clearly not one" (Revelle & Wilt, 2009a, p.1). A further argument is that a single GFP factor, including intelligence, will not demonstrate the contribution of specific traits nor how they impact on personality (Chamorro-Premuzic & Furnham, 2010), and that despite the wealth of new research on the general factor of personality, it seems "the minimum that personality psychologists can work with are the classic big five factors of personality" (Hogan, 2005, p.334). While the idea of a general factor of personality is attractive to researchers, the current literature fails to show how this has been discovered in the GFP currently offered. Rather, the current model of GFP is seen as mapping onto potential maladaptive personality behaviours and disorders, rather more than its purported use as an explanation for desirable mating preferences and perfect colleagues.

In contradiction to early support for a GFP and its presumed benefits in evolutionary selection (Rushton & Irwing, 2009; Erdle, Irwing, Rushton & Park, 2010; van der Linden et al., 2010; Muncer, 2011) argues that there is little evidence, nor statistical support according to recent meta-analysis, to justify such faith in a GFP (Muncer, 2011), and that a GFP is too reductionist to be of much use for organisational selection or workplace performance.

Nevertheless, the search from differential psychologists for fewer factors and shorter measures continues, and, in line with such a search, this thesis investigates how a new short measure that looks at reputation and identity in terms of the three Socioanalytic factors would be of use for selection and development. Knowing an individual's preferences for either GAH, GAL or FM, using a short measure of the ST could

contribute to the field of selection and development. Having considered the GFP and its limitations, it is recognised that attempts to reduce personality factors into fewer, and possibly more parsimonious, scales, is worth exploring. A discussion of how to do this is addressed now.

3.6 Discussion

3.6.1 Reputation, Identity, Observer versus Self Ratings: A Summary

The problem when assessing for individual differences in personality is that most measures still focus on reputational traits and fail to measure identity. Assessing someone purely on reputational traits, in line with the FFM, does not necessarily provide an accurate indicator of their personality. Reputational traits merely demonstrate parts of personality that are seen by others, and which are able to be managed by a manipulative individual, which is why psychopaths often do well at interviews (Babiak & Hare, 2007).

3.6.2 Reputation and Identity

Our reputation is formed from how others see, and it might be thought that identity is redundant in explaining behaviour at work. Hogan argues that it is only reputation that has an impact on performance evaluation, (2011) and identity has little input into how we performance at work. Nevertheless, it is argued here that identity is crucial to how well we do at work, how we see ourselves, and to what drives us. How our values shape our behaviour is fundamentally tied up with our identity, and identity is fundamental to the way we behave and interact with others. Therefore, both reputation and identity need consideration in any assessment process. An example of how difficult it might be for accurate and valid observer ratings of an individual, particularly prior to having seen that individual in a social or work setting, is in relation to the personality trait of emotional stability. Research has found that it is very hard to gauge and assess someone's emotional stability from observation alone (Connelly & Ones, 2010). This is important if arguing for the benefit of observer ratings, as emotionality is core to

success, not just at work, but also in relationships and life generally, and encourages the use of self-reports for personality assessment. Despite self-reports being criticised for a lack of objectivity (Connelly, & Ones, 2010), they are the most widely used method of gathering personality data, and it is argued that "the best criterion for a target's personality is his or her self-rating…otherwise, the whole enterprise of personality assessment seriously needs to rethink itself" (Paulhus & Vazire, 2007, p.226). Emotional stability, referred to as Adjustment on the HPI (Hogan & Hogan, 1997), is argued to be key to how well people succeed at work, both in performance and with their relationships (Hogan & Hogan, 1997; Hogan & Holland, 2003). A brief consideration of the importance of Adjustment in both GAH and GAL will be outlined here and explains why it is expected to form part of both higher order factors.

3.6.3 Adjustment – the key to Getting Ahead and Getting Along

Adjustment is an individual difference of personality that significantly impacts on a variety of aspects of organisational effectiveness, including: good interpersonal relationships and individual management styles (Barrick & Mount 2005; Hogan & Hogan, 2009; Hogan & Ones, 1997; Kets de Vries, 1989; Mansi, 2001; 2002; 2007; 2008); job satisfaction (Judge, Bono, Ilies, & Gerhardt, 2002); personal relationships and career success (Furnham & Heaven, 1999; Judge & Kammeyer-Mueller, 2007; van den Berg & Feij, 1993).

Individuals with very low scores for emotional adjustment (> .30 on HPI) suggest someone who is easily emotionally upset; highly anxious; tends to experience negative feelings more often than those with higher levels of emotional adjustment; has lower tolerance to stress; finds frustration difficult to manage; and tends to perceive new situations as threatening and attributes hostile intentions to people and events more frequently than those with higher Adjustment (McCrae & Costa, 1986; Costa and Widiger, 1994; Suls, David & Harvey, 1996; Matthews & Deary, 1998, Hogan & Hogan, 2007). Neuroticism refers to a "chronic low level of emotional adjustment and instability" in individuals (Costa & Widiger, 1994, p.3), and is a key component of many psychometric measurements for individual personality differences. The label 'neuroticism', however, arises from the clinical model of personality (see DSM-IV) and is not easily transferrable to an organisational setting. The terms 'emotional stability'

and ‘emotional adjustment’ tend to be used in organisational settings (Hills & Argyle, 2001) where “greater emotional stability would be regarded as a positive aspect of personality. Emotionally stable people would be expected to be calm, imperturbable and to complain little about their personal worries and anxieties” (Hills & Argyle, 2001, pp.1358-1359). The term Emotional Adjustment, therefore, will be used in this thesis generally, and when referring to the HPI test scores, Adjustment.

Adjustment indicates levels of neuroticism or stability and includes awareness of how our emotions impact on ourselves, and others (Hogan & Hogan 2007; Matthews & Deary, 1998). Hostility, a sub-facet of emotional adjustment, is highly damaging to interpersonal relationships as those high in hostility will magnify any negative situation through aggressive reactions (Kobasa, 1979). “The tendency to experience negative affect is represented directly by the neuroticism facets of anxiety, depression and angry hostility” (Widiger et al., 2002, p.46), not usually desirable traits to display in the workplace. It can be seen, therefore, how useful a measure for emotional adjustment can be, as it will show how likely someone is to have traits that are predictive of business failure and derailment (Costa & Widiger, 1994; Widiger et al., 1994; Matthews & Deary, 1998; Furnham & Crump, 2005).

Moreover, adjustment plays an important role in identity as what drives someone to act is based on their core values, their motivations and personal preferences all of which are seen as part of an internal process, the ‘insider view’ which can only be accessed by self-report measures. As a measure of reputation this has criticisms for while “…it is always risky to take what people say about themselves at face value; the data are quite clear that people are poor judges of how they are seen by others” (Hogan, 2005, p.336). Nevertheless, it may be that for some aspects of personality – for the insider perspective of how people see themselves, and how they describe their emotions - we have nothing better. While it is reputation that is perceived by others, a consideration of identity is important in understanding how someone behaves, and is why it is so important to consider the key trait of Adjustment when selecting, developing, appraising or promoting an individual.

This research investigates two key areas in personality assessment. For, while there have been many attempts to look at higher order factors of reputation, there have been

none so far which consider the higher order factors of identity. Neither have there been any studies which look at higher order factors of a combination of reputation and identity. This research will investigate whether factors of two psychometric measures, the HPI and the MVPI include higher order factors on three scales: getting ahead GAH, getting along GAL and finding meaning FM. Secondly, it will consider the importance of Adjustment in the three higher order factors of GAH, GAL and FM. The preceding chapters have introduced ST and personality theory in general. The next chapters introduce the methodology, and six empirical studies which investigate the measures, develop a new short measure, validate the new measure, and in the final chapter discuss the research findings.

Chapter 4: Research Methdology

4.1 Introduction

Following the literature review, an overview of the research methodology is outlined here. The research in this thesis looks at personality and individual differences by investigating higher order factors of GAH, GAL and FM within two psychometric measures: the HPI and the MVPI. Following the development of a new short measure, validation studies included other measures of Big Five Factors, Core Self Evaluations, the Dark Triad, Engagement indicators, performance outcomes and the Dark side of Personality. In the first two studies, archival data was used, consisting of participants' test scores within the USA over the last 30 years which had been collected and stored by Hogan Assessment Systems, and provided for the purposes of this research.

In line with the literature review (Chapters 2 and 3) it is argued that the only means considered to be valid and reliable in measuring individual differences of personality are those of a quantitative nature, and particularly psychometric measurements. This led to a purely quantitative approach and one generally referred to, and applied by, personality psychologists who use such measurements for assessment, selection and development. A quantitative methodology ensures a systematic approach to investigation, allows for analysis of meta-data, involves specific measurements and is replicable. It does, however, overlook unique, individual responses which become more difficult to distinguish in the overall analysis of such large datasets. The limitations of using quantitative analysis only will be discussed at the end of the thesis.

Although key research questions were formed before analysis of archival data, the research comprised an exploration, in the early stages, in order to investigate which traits within the two measures would relate to GAH, GAL and FM. The methodology was one of initial exploratory investigation, planned to develop, explore and refine questions which would form hypotheses for later empirical chapters (see Chapters 6, 7 and 8). Chapter 5 describes the first empirical study which is an investigation into the search for higher order factors within the GAH, GAL and FM. Following exploratory

investigation, a new short measure was developed. The design and development of the new measure are described fully in Chapters 6 and 7. Following this, three validation studies were conducted in Chapters 8 (Parts 1 and 2) and 9. The final chapter, Chapter 10, discusses the research and its limitations.

4.2 Research framework

The methodology chosen here fits with the theoretical framework and the research tradition of the area in this study, namely that of quantitative methods using psychometric measurements. The research design for Chapter 5 is that of a correlational design, using archival data, to investigate the HPI and MVPI scales looking for three Higher Order Factors of Getting Ahead, (GAH), Getting Along (GAL) and Finding Meaning (FM). Chapter 5 discusses the first empirical investigation where bivariate correlations were conducted to ascertain if there was a high degree of inter-correlation between the two psychometric measures of the HPI and the MVPI. Following this, to explore any underlying factor structure within the HPI and the MVPI, PA was conducted with a Principal Axis Factoring (PAF). The methodology applied in the first analysis was Exploratory Factor Analysis (EFA), using Maximum Likelihood Estimation (MLE). Both Varimax and Oblique rotations were conducted.

Chapter 6 then tested the model which suggested two higher order factors and sought to confirm these. Bivariate correlations and EFA were conducted. Following this analysis Confirmatory Factor Analysis (CFA) was used to confirm the factor structure of GAH and GAL. Measurement invariance was included to explore the fitted CFA model with sex and ethnicity. In this study, Structured Equation modelling (SEM) was applied to test the relationship between performance outcomes and the predictive validity of GAH and GAL.

Chapter 7 provides details of the development of the new measure, including item selection and development in line with Hinkin's model (1998). PA was conducted to determine the number of factors to retain from an EFA, and further analysis included a PAF and CFA on a random, split-half sample to further explore the structure of the two

dimensions. Measurement invariance was also included in this study to investigate how well the model represented sex and ethnicity.

Three validation studies were then conducted. Chapter 8 contains two sections: Part 1 and Part 2. Part 1 conducted Hierarchical Multiple Regression analyses to explore the incremental validity of the GAH and GAL against other measures including a measure of the Big Five and work engagement. Part 2 conducted Hierarchical Regressions to further explore, and confirm, the incremental validity of the GAH and GAL against additional measures including the Big Five, Core Self Evaluations and the Dark Triad. Chapter 9, the final validation study, tested for the incremental validity of the GAH and GAL against the Hogan Development Survey (HDS). In Chapter 9, bivariate correlations and Hierarchical Regressions were conducted to assess for predictive validity of the new measure.

This thesis investigates which scales form part of which of the 3 predicted higher order factors underpinning Socioanalytic theory and how far the HPI and the MVPI can demonstrate this. It also investigates, in line with precedents referred to earlier, whether a new short measure can be developed from the HPI and the MVPI. Analysis has not, so far, been conducted as to whether the HPI or the MVPI demonstrate the three Socioanalytic profiles showing GAH, GAL or FM, nor which facets of each measure correlate to form the three super factors. There are six empirical chapters in this thesis and each sample represents one study.

4.3 Ethics

These studies were approved by the Birkbeck Ethics Committee (University of London), in 2011. Archival data and anonymous on-line data was collected and there were no further ethical considerations pertaining to the research data collection. While all ethical guidelines were met, there were some areas which merited ethical consideration and are discussed fully in Chapter 10 in relation to future research. All participants in studies where archival data was used were given information on feedback, by Hogan Assessment Systems, and told that data collected would be kept

confidential, and would be put into an archival database for future research. Participants on MTurk were informed that the data was for a research project and that feedback would not be given. An Ethical Consent Form is attached (see Appendix I).

Chapter 5: Study 1 – An Investigation for Higher Order Factors

5.1 Introduction: An investigation to search for Higher Order Factors of personality in the Hogan model

ST argues that personality comprises both reputation, measured by the HPI, and identity, measured by the MVPI, where "reputation *describes* a person's behaviour, while identity *explains* it" (Hogan & Holland, 2003, p.100). One way to assess reputation is through observer ratings which indicate how observed behaviours might relate to future performance (Connelly & Ones, 2010; Connelly & Husheger, 2012). While observer ratings can be effective predictors of behaviour, the arguments put forward in Chapter 3 highlight some of the problems with them, namely bias, inaccurate measurement and a lack of criteria related assessment. Nevertheless, they offer a useful method of assessment, particularly when the observer is already working with the individual, and can report on observed, and measurable, workplace behaviours (Connelly & Ones, 2010).

One study attempted to demonstrate this, and investigated how far the HPI would predict GAH and GAL in line with performance outcomes (Hogan & Holland, 2003). Hogan and Holland (2003) defined GAL behaviours as those which enhance co-operation with others, help to build, develop and maintain relationships and win the approval of other people. Behaviour related to GAH was goal orientated, and interested in achievement and status, both for the individual themselves, and for the group in which they worked. Hogan and Holland (2003) predicted: a) GAL would require Adjustment, Conscientiousness and Agreeableness, which in the HPI are labelled Adjustment, Prudence and Interpersonal Sensitivity (Hogan & Hogan, 1997). These factors indicate that people would be more rewarding to deal with and thus, others would like to work with them, which would be reflected in positive reputations, and; b) that GAH individuals would require Adjustment, Extraversion and Openness (in the

HPI measure these are labelled Adjustment, Sociability and Ambition and Inquisitive) indicating someone who is confident, ambitious, outgoing and eager to experience and learn new things. It was argued that aligning predictor variables, in this case the HPI, with performance criteria would offer a more valid measure of personality (Hogan & Holland, 2003).

In Hogan and Holland's study (2003) the hypothesis that certain behaviours would be associated with GAL was supported, and Adjustment, Prudence and Interpersonal Sensitivity predicted the GAL factor. This study found that people who were emotionally stable, conscientious, dependable, and sociable, can be described as having a GAL profile. Adjustment (emotional stability) was found to correlate most highly with this scale and as will be discussed later, it has implications for both GAL and GAH profiles. Hogan and Holland (2003) hypothesised that GAH would require Adjustment, Extraversion and Inquisitive, yet their results showed some slight discrepancy, with GAH being supported by Adjustment, Ambition, and Prudence. It should be noted that the Big Five Extraversion factor splits (conceptually and empirically) into both Ambition and Sociability on the Hogan Personality Inventory (Hogan & Hogan, 1995), with Ambition, but not Sociability, forming part of the GAH factor. This indicates someone who is driven to achieve, and most likely, but not necessarily an extravert; someone who is emotionally stable though less so than someone with a getting along profile; and someone who is conscientious and reliable, rather than open to new experiences.

Furthermore, Hogan and Holland (2003), argued for the link between criteria and performance outcomes to assess performance in terms of GAH and GAL, stating than when "performance criteria are classified in terms of getting along and getting ahead, a more nuanced pattern of personality-performance links would emerge" (Hogan & Holland, 2003, p.102). As Hogan and Holland (2003) point out, the "correlations between predictor variables and criterion data steadily increase as the criterion data become more specific… this finding should inform subsequent research on this topic" (Hogan & Holland, 2003, p.109). The scales of Adjustment, Prudence and to some extent Ambition are, it is argued, all valid predictors for GAH *and* GAL (Hogan & Holland, 2003). Nevertheless, while Hogan & Holland's (2003) study showed that clear performance criteria matched against personality scales are useful predictors to show a

GAH and GAL profile, they only used the HPI, which used observer ratings, to do so. The HPI measures reputation, and Hogan & Holland's study had no information from the MVPI to show how the impact of identity. If ST is predictive of behaviour at work, then any research into why and how people get on at work needs to include the measurements of both reputation and identity. It should also be noted that since the Hogan model splits Conscientiousness between Ambition and Prudence, one would expect Adjustment to be a stronger predictor of either Ambition or Prudence alone (Chamorro-Premuzic, 2017).

The studies in this thesis used both the HPI and the MVPI to understand fully which aspects of each, in terms of reputation and identity, have an impact on an individual's success at work. The two measures need to be considered in tandem, as both aspects of personality, according to ST, are deemed important in how we achieve success at work, as well as in getting on with others. Investigating the relationship between the HPI and MVPI, it is expected to find three profiles as suggested by ST: those of GAH, GAL and FM. The existing literature suggests that GAH and GAL are key predictors of workplace success, although ST argues that FM may be as important a driver as GAH or GAL for some individuals. Given that, an investigation into a higher order factor of FM within the scales of the HPI and MVPI will be included in this study. The following hypotheses were considered:

5.2 Hypotheses

H1: Factor analysis of both the HPI and the MVPI will identify three higher order factors: GAH, GAL and FM demonstrating the three drivers which comprise personality according to ST; the need for acceptance, the need for status and the need to make sense of the world (Hogan, 1982).

H2: It is expected that, based on literature in Chapter 2, GAH will include the scales of Adjustment, Ambition, Power, Prudence, Recognition and Sociability.

H3: It is expected that, based on the literature in Chapter 2, where those who demonstrate behaviours "that gain approval of others, enhances co-operation and serves to build and maintain relationships" (Hogan & Holland, 2003, p.103) are more likely to get along with others, GAL will include the scales of Adjustment, Affiliation, Altruism, Interpersonal Sensitivity, Prudence and Sociability**.**

H4: It is expected that, based on the literature in Chapter 2, FM will include the scales of Aesthetics, Inquisitive, Learning Approach and Scientific.

H5: Based on previous research where Adjustment "was found to be a valid predictor for both getting along and getting ahead at work" (Hogan & Holland, 2003, p.20), it is expected that Adjustment will be included in the higher order factors of GAH and GAL. Based on the literature above, the hypotheses to be explored in the first empirical chapter will expect the following higher order factors to include the scales below (Table 5.1)

Table 5.1 *Hypothesized Higher Order Factors of GAH, GAL and FM with scales from HPI and MVPI*

Getting Ahead - GAH	**Getting Along - GAL**	**Finding Meaning - FM**
Adjustment	Adjustment	Aesthetics
Ambition	Affiliation	Inquisitive
Power	Altruism	Learning Approach
Prudence	Interpersonal Sensitivity	Scientific
Recognition	Prudence	
Sociability	Sociability	

Note: While no study has explicitly conducted this analysis before, the hypothesised associations are grounded on previous bivariate correlations reported in Hogan and Hogan (2009).

5.3 Method

5.3.1 Participants

This dataset was offered for use in this research study by Hogan Assessment Systems (HAS, 2011) and the data collected by HAS between 2009 and 2011. In total, 2104 participants, Females, N=720 (34.2%); Males, N=1027 (48.8%); Missing, N=357 (17%) took part in the current study. Their ages ranged from 19 to 79 years (M=39.58, SD=9.51). The participants' test scores from nine independent studies were combined in this study in order to obtain a robust number for preliminary analyses. The participants were predominately middle and senior managers.

All participants were US employees and the occupational sectors included: 26% from Hospitality, 19% from Construction, 15% from IT, 13% Haulage, with 9% Missing and 18% Incomplete cases. The data is archival and was collected between 2011 and 2013 by HAS. Their ethnicity included: 22.8% White, 2.1% Black, Hispanic 4.2%, Asian 3.5%, American Indian 1%, Two or More Ethnic groupings, .2%, Other 5.4%, Missing 60.7%. This is an extremely high level of missing data, and HAS explained that strict US discrimination legislation affects practice of data collection where many respondents do not complete this field because of discrimination practice in the workplace, and particularly so with minority groups. With such a high percentage of ethnicity missing, this variable was not included for analysis, and the limitations of this are addressed below. Participants completed two psychometric measures as part of internal employee development programmes across various organisations. The measures and individual feedback were delivered by HAS certified consultants. Permission was requested from all participants for their anonymous data to be used by HAS in any future research studies. The limitations of using this data are discussed below.

5.3.2 Measures

5.3.2.1 The Hogan Personality Inventory - HPI (Hogan & Hogan, 2007)

The HPI (Hogan & Hogan, 2007) is a normative personality inventory that was "initially

developed in the United States for industrial – organizational and vocational applications" (Anderson & Ones, 2003, p.7). Influenced by the classic Five Factor Model (FFM) and the California Psychological Inventory (CPI), both of which classify personality differences into five broad themes, the HPI is designed specifically to be used within an organizational environment, and it provides detailed information regarding the "bright side" of personality (Hogan & Hogan, 2007), that is, individual characteristics that facilitate a person's ability to get along with others and to achieve his/her educational and occupational goals (Hogan & Hogan, 2007).

The HPI demonstrated strong correlations with the NEO PI-R NEO PI-R (Goldberg, 2000; Goldberg, 1992), the Big- Five Markers (Hogan & Hogan, 2007), Personal Characteristics Inventory (Mount & Barrick, 2001), and the Inventario de Personalidad de Cinco Factores (Salgado & Moscoso, 1999), with coefficient ranges as follows: Adjustment/ Emotional Stability/Neuroticism (.66 to .72); Ambition/ Extraversion/ Surgency (.39 to .60); Sociability/Extraversion/ Surgency (.44 to .64); Interpersonal Sensitivity/Agreeableness (.37 to .61); Prudence/Conscientiousness (.36 to .59); Inquisitive/Openness/Intellect (.33 to .69); Learning Approach/Openness/ Intellect (.24 to .35). The primary scales of each measure against HPI primary scales, showed good validity and reliability (Hogan & Hogan, 2007). There are no items concerning sexual preference, religious beliefs, criminal offenses, drug and alcohol incidents, or racial/ethnic attitudes. Finally, there are no items concerning physical or mental disabilities. The measure has also been found to predict job performance (Hogan, Rybicki, Motowidlo, & Borman, 1998). Internal consistencies for this study are not available, though the research above supports the reliability of the measure, and is documented in the HPI manual. It is recognised that this is a limitation though given the widespread use of, and research into, the Hogan measures in the scientific community, there is no reason to question the reliability of the scales.

The scales are based on the Five-Factor Model, but have been extended to include two aspects of personality relating to the FFM of Extraversion, which is split into two in the HPI comprising Ambition and Sociability, and the scale of Openness. Ambition measures the degree to which a person seems socially self-confident, and relates to competition, whereas Sociability measures the degree to which a person seeks, and enjoys, the company of others. Openness generally refers to creative thinking and being

open to new ideas. The HPI splits this scale into two, comprising Inquisitive and Learning Approach, where Inquisitive relates to someone who is bright, creative and curious whereas Learning Approach relates to how much someone enjoys learning for its own sake.

The HPI is an ipsative 206 'true/false' item self-report questionnaire containing seven primary scales set out in Table 5.2 below. The inventory contains seven primary scales that align with the five-factor model (FFM) of personality (Digman, 1989; Goldberg, 1993; Wiggins, 1996). It is considered a robust and valid measurement of how we appear to others at work as well as in predicting occupational success (Hough & Furnham, 2003), and has been used in many studies investigating workplace performance (see Landy, 1994; Hogan, Rybicki, Motowidlo, & Borman, 1998; Holland & Hogan, 1999; Shelton, Holland, & Hogan, 2000). During the normative stages of the development of the HPI, observer ratings were gathered and were compared to individual respondent ratings on the HPI.

The development of the HPI scales was based on the similarity of the observer and respondent ratings, reflecting the reputation of the individual (Hogan & Hogan 2009). The HPI research archives from the mid 1970s onwards include more than 1,000,000 job applications, with data on almost all job roles in every industry. A study by Axford (1996) found internal consistencies for the HPI ranging from .71-.89, and test-retest coefficients of .74-.86, (Axford, 1996). Cronbach's Alpha for the HPI scales are: Adjustment (.89), Ambition (.86), Sociability (.83), Prudence (.78), Inquisitive (.78) Learning Approach (.75), and Interpersonal Sensitivity (.71), (Hogan & Hogan, 1992). The HPI was developed for use in personnel selection (Hogan, 1986), and scales relate to job selection, career, and occupational performance. The HPI scales correlate with various measures of job performance across a variety of jobs, ranging from $r = .15$ to $r = –.62$ (Hogan & Hogan, 1992).

The HPI includes a validity key to ensure validity for each item statement, and all data was matched against other data from within organisations such as tests, inventories, and observer descriptions (Hogan & Hogan, HPI Manual 2009). According to the most recent HPI Manual (Hogan & Hogan, 2009), more than 400 validity studies have been carried out on over a million job candidates with ages ranging from 18 to 67 years, and

from various ethnic groups (White, Blacks, Hispanics, Asians, Native Americans). Norms are shown for different groups, including professions, and norm group sizes range up to 45,000 cases. Furthermore, and in addition, the inventory was constructed so that no item question related to sensitive or contentious issues such as sexual preference, religious beliefs, criminal offenses, drug and alcohol incidents, racial or ethnic attitudes, nor physical or mental disabilities (Hogan & Hogan, 2009). A table of the Hogan Personality Inventory scales is shown below (Table 5.2).

Table 5.2 *The Hogan Personality Inventory (HPI) Scales (Hogan & Hogan, 1997)*

HPI Scale	Description
Adjustment	The Adjustment scale reflects the degree to which a person is calm and even-tempered or conversely, moody and volatile. This trait represents Neuroticism (correlation coefficients range between .66 and .81; Hogan & Holland, 2003).
Ambition	The Ambition scale evaluates the degree to which a person seems leader like, seeks status, and values achievement. This trait represents the leadership and status seeking qualities of Extraversion (correlation coefficients range between .39 and .60; Hogan & Holland, 2003).
Sociability	The Sociability scale assesses the degree to which a person appears talkative and socially self-confident. This trait measures the social interaction qualities of Extraversion (correlation coefficients range between .44 and .64; Hogan & Holland, 2003).
Interpersonal Sensitivity	The Interpersonal Sensitivity scale reflects social skill, tact, and perceptiveness. This trait represents Agreeableness (correlation coefficients range between .22 and .61; Hogan & Holland, 2003).
Prudence	The Prudence scale concerns self-control and conscientiousness. This trait represents Conscientiousness (correlation coefficients range between .36 and .59; Hogan & Holland, 2003).
Inquisitive	The Inquisitive scale reflects the degree to which a person seems curious, adventurous, and imaginative. This trait reflects the imaginative and creative dimensions of Openness (correlation coefficients range between .33 and .69; Hogan & Holland, 2003).
Learning Approach	The Learning Approach scale reflects the degree to which a person enjoys academic activities and values education as an end in itself. This trait measures the need for intellectual stimulation found within Openness (correlation coefficients range between .05 and .35; Hogan & Holland, 2003).

Adapted from Hogan & Hogan (2009)

5.3.2.2 The Motives, Values and Preferences Inventory – MVPI (Hogan & Hogan, 2010 2nd Ed)

The MVPI is a measurement of an individual's interests, motives, drivers and core values, and is influenced by taxonomies of drivers, values and preferences developed by theorists such as Allport (1927), Murray (1938), and Holland (1966, 1985). The MVPI indicates how someone's values will shape their behaviour, motivate them to action and indicate where their preferences lie, and thus it is a measure of their identity. Additionally, the MVPI seeks to match the fit between an individual and an organisation's culture and job specification. Working in an organisation that is consistent with, and in accordance with, one's values has been shown to be far more enjoyable that working in one which is diametrically opposed to one's values (Holland, 1985; Hogan & Hogan, 2010).

The MVPI is an untimed inventory, consisting of 200 items to which participants respond "agree", "uncertain", or "disagree". The MVPI manual suggests that the individual's *key drivers* (their motivations, values and preferences) shape their leadership style, the culture they work in, their unconscious biases that influence decisions and the types of organisations they choose to work for. The MVPI manual confirms that all items were screened for content that might seem to be offensive or an invasion of privacy, similar to the HPI, and no item was found to overlap (Hogan, Hogan, & Warrenfeltz, 2007). The MVPI has been shown to predict occupational preferences (Furnham, Hyde, & Trickey, 2013a), and has demonstrated impressive psychometric properties (Furnham, Trickey, & Hyde, 2012). According to the manual, the MVPI scales demonstrate internal-consistency reliability coefficients ranging between .70 (Security) and .84 (Aesthetic), and test re-test reliability coefficients ranging from .69 (Power) to .88 (Recognition). The MVPI's internal reliability ranges between .70 and .84, with test-retest reliabilities ranging between .64 and .88 (Hogan & Hogan, 1999). A table of the Motives, Values and Preferences Inventory is shown below (Table 5.3).

Table 5.3 *Motives, Values and Preferences Inventory (MVPI) scales and descriptions (Hogan & Hogan, 2010 2nd Ed)*

MVPI scale:	Description
Recognition	Associated with fame, visibility, and publicity; an interest in being acknowledged and rewarded; a lifestyle organized around opportunities for self-display.
Power	Associated with competition, achievement, being perceived as influential; an interest in challenge, and a lifestyle organized around worldly success.
Hedonism	Associated with good company and good times, pleasure, excitement, and variety and a lifestyle organized around entertaining friends, good food, and having fun.
Altruistic	Associated with improving society, a desire to serve and actively helping others particularly those less fortunate, and a lifestyle organized around making the world a better place to live.
Affiliation	Associated with frequent and varied social contact, and interaction and a keen interest in working with others and feeling part of a group.
Tradition	Associated with history, convention, morality, traditional 'family values' and an interest in high standards of appropriate social behaviour, and well-established principles of conduct.
Security	Associated with certainty, predictability, risk-free environments, structure and order, and a lifestyle organized around minimizing risk, uncertainty, and criticism.
Commerce	Associated with business activities, money, financial gain, profits, finding business opportunities, and a lifestyle organized around investments and financial planning.
Aesthetics	Associated with creative and artistic self-expression, an interest in art, literature, and music, using the imagination, enjoying culture, and attractive, stylish surrounding.
Science	Associated with learning, an interest in new ideas, technology, and analytical problem solving, and a lifestyle organized around exploring and understanding how things work.

Adapted from the Motives, Values and Preferences Inventory
(Hogan & Hogan, 2010. 2nd Ed)

5.3.3 Procedure

HAS confirmed that after giving consent and being reassured that their individual responses would remain confidential, all participants logged on to the HAS website (URL of login password) via a unique login password. The HPI and MVPI were presented on the computer screen for participants to complete. After completing the questionnaires, participants were given the opportunity to ask any further questions. They were also informed that their results would be given back in developmental feedback coaching sessions later, and that their individual results would be archived for future research by HAS. They were offered the opportunity to withdraw from the process at any time before testing began, as well as during the testing process.

5.4 Results

5.4.1 Descriptive Statistics and Bivariate Correlations

Bivariate Correlations and Descriptive statistics are presented in Table 5.4 below. Internal consistency reliabilities are not reported in the present study as HAS do not provide item level responses when using their measures, due to their proprietary nature, though internal consistency reliabilities of 0.8 from 6 million participants' scores, are reported in the HPI Manual. The limitations of this are discussed below. The data was cleaned for missing values and anomalies, while ensuring the assumptions of the general linear model were not violated (Judd, McClelland & Ryan, 2009). Bivariate correlations were conducted to ascertain the level of inter-correlations between the HPI and the MVPI. Several clusters of variables showed significant, albeit low, correlations. These are:

Adjustment correlated significantly with Ambition, Interpersonal Sensitivity, Prudence and Affiliation. Three of these were expected to correlate as part of the GAL higher order factor; Adjustment, Interpersonal Sensitivity and Affiliation. Ambition is one of the strongest correlations within the GAL higher order factor, will be considered below. Prudence showed significant positive correlations with Adjustment and Interpersonal Sensitivity which indicates someone who is considerate of others and sensitive to their

needs – qualities needed in order to get along with others – and a negative correlation with Hedonism, indicating that a desire to satisfy one's own needs is more important than considering others. Affiliation and Sociability showed a strong positive correlation though both are hypothesised to form part of different higher order factors, Affiliation in GAL and Sociability in GAH. The correlation, however, is not surprising as the need to affiliate with others requires the skill of being able to socialise. Whether those with high Sociability seek affiliation with others is less clear but it suggests that each factor serves the other well.

Two of the strongest positive correlations were i) Scientific and Inquisitive, expected in a higher order factor for FM, and ii) Power and Commerce, which might be expected to show in a GAH higher order factor in further analyses. Other results indicative of a GAH factor are Recognition and Commerce; and Recognition and Power. Ambition showed several significant positive correlations with Adjustment, Recognition, Sociability, Interpersonal Sensitivity, Learning Approach, Affiliation and Power. These correlations are interesting in that they show Ambition forming part of all three higher order factors. It may not be much of a surprise: if the driving need is either to get ahead, get along or to find meaning, the ambition to do any of these will be included in the higher order factor. What motivates people drives them to act, so whether it is finding a purpose, getting on with others, or achieving status, ambition is needed to do so. The correlations partly support the GAH hypothesis, although Ambition could manifest in the need to FM as it correlates to Learning Approach, or to GAL (correlating with Interpersonal Sensitivity), and will be investigated in the next empirical study.

The Inquisitive factor correlated with Scientific, Sociability, Learning Approach and Aesthetic. These results support the FM factor which was hypothesised to include Scientific, Learning Approach and Aesthetic, but had not accounted for Sociability. Power correlated significantly with Commerce, Recognition, Sociability and Ambition which accords with the underpinning theory. Prudence correlated with Adjustment, Interpersonal Sensitivity, Security and Hedonism. Correlations with Adjustment and Interpersonal Sensitivity would be expected to correlate with Prudence, but Hedonism is surprising given that aspects of it are focuses so heavily on the self, rather than on the consideration of others, and will be investigated further. Recognition correlated

positively with Sociability, and further investigations will be conducted to find out these two factors form part of a higher order factor of GAH.

The results show that there are some promising inter-correlations between the HPI and MVPI, thereby showing partial support for the hypotheses. Nevertheless, the factors are not clear, the correlations are weak and not strongly indicative of any higher order factors at this stage. In order to gain a clearer understanding of what these correlations mean, and to investigate which factors relate more precisely with which higher order factor, further analysis was undertaken, including parallel analysis and exploratory factor analyses (using both oblique and orthogonal rotations).

Table 5.4 *Bivariate correlations and descriptive statistics for the HPI & MVPI*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	M	SD
1. Adjustment	—																14.46	4.82
2. Ambition	.54**	—															19.49	2.46
3. Sociability	.18**	.41**	—														21.11	4.23
4. Interpersonal Sensitivity	.50**	.39**	.33**	—													15.37	4.52
5. Prudence	.50**	.17**	-.08**	.36**	—												9.05	3.12
6. Inquisitive	.20**	.27**	.46**	.18**	.01	—											33.8	7.61
7. Learning Approach	.29**	.32**	.29**	.20**	.20**	.35**	—										49.97	5.26
8. Aesthetics	-.13**	-.09**	.18**	.00	-.13**	.32**	.14**	—									50.07	6.31
9. Affiliation	.33**	.36**	.54**	.52**	.12**	.17**	.18**	.06**	—								47.25	5.77
10. Altruistic	.11**	.06*	.14**	.34**	.23**	.18**	.19**	.30**	.26**	—							41.01	6.92
11. Commerce	.02	.18**	.26**	.06**	.02	.24**	.18**	.17**	.17**	.21**	—						48.99	6.16
12. Hedonism	-.27**	-.20**	.22**	-.07**	-.33**	.00	-.15**	.29**	.25**	.09**	.18**	—					42.34	7.92
13. Power	.02	.34**	.38**	.05*	-.05*	.24**	.18**	.13**	.31**	.20**	.57**	.24**	—				41.4	7.87
14. Recognition	-.17**	.09**	.49**	.05*	-.13**	.20**	.11**	.27**	.29**	.16**	.40**	.39**	.48**	—			43.32	7.02
16. Science	.08**	.04	.19**	.02	.10**	.59**	.32**	.27**	.08**	.24**	.31**	.07**	.29**	.21**	—		48.18	6.18
16. Security	-.07**	-.25**	-.26**	.03	.37**	-.11**	.00	.05*	-.10**	.27**	.14**	.05*	.00	.05*	.16**	—	28.06	6.25
19. Tradition	.11**	.19**	.00	.18**	.24**	.04	.07**	.05*	.03	.36**	.21**	-.18**	.20**	.04	.06*	.23**	24.33	4.56

N = 2014 Note: * $p < .05$ ** $p < .01$

5.4.2 Parallel Analysis

Given the correlations shown above (Table 5.4), it was decided to conduct a parallel analysis to explore any underlying factor structure within the HPI and MVPI. Parallel analysis is a method for determining the number of factors to retain from an exploratory factor analysis through data simulation and permutation, as such, it seeks to address the subjectivity found when interpreting traditional Scree plots. In order to conduct the parallel analysis, the R 'paran' package (Dinno, 2012) was used. This package is an implementation of Horn's technique for numerically and graphically evaluating the factors retained in an exploratory factor analysis, with factors having adjusted eigenvalues greater than one are to be retained (Dinno, 2012).

When specifying the parameters for the parallel analysis, it was decided to apply a Principal Axis Factoring method to the data, as opposed to a Principal Components method given the exploratory nature of the hypotheses, and the goal to investigate underlying latent factors, rather than simply reduce many variables down to as few dimensions as possible. Lastly, the data was specified to be iterated 5000 times, and the 95th percentile was used to estimate bias between the adjusted and unadjusted eigenvalues. The parallel analysis (Table 5.5), found three factors to have adjusted eigenvalues greater than one. This suggests that three latent factors are found within the data. Accordingly, further analysis was carried out to further explore these three factors, in particular, their factor loadings.

Table 5.5 *The Results of the Parallel Analysis.*

Factors	Adjusted Eigenvalue	Unadjusted Eigenvalue	Estimated Bias
1	3.28	3.49	.20
2	1.95	2.12	.16
3	1.22	1.36	.14
4	.82	.93	.11
5	.58	.67	.09
6	.24	.31	.07
7	.05	.11	.05

5.4.3 Maximum Likelihood Estimation Factor Analysis with three factors

Exploratory Factor Analysis (EFA) with Maximum Likelihood Estimation (MLE) was used to in order to further understand the underlying theoretical factor structure. MLE was seen as the most appropriate analysis as it would estimate the factor loadings by maximising the likelihood of sampling the observed correlation matrix (Tabachnick & Fidell 2007: 2013). Considering the parallel analysis and ST's three motivations of GAH, GAL and FM, the EFA was specified to produce a three factor solution. The results are presented in Table 5.6. The Eigenvalues show that three components account for 41% of the variance, with the most variance within the first two components. Despite the Eigenvalues all being above 1, only two clear factors emerged, and only one with any relationship to the aforementioned theories.

Component 1 is indicative of a possible higher order factor of Getting Along, albeit still not distinct, and showing scales not expected to be associated with GAL. Component 2 shows very little resemblance to Getting Ahead, and has only two scales which were expected to form a Higher order factor of Getting Ahead: Recognition and Power. Ambition, does not load onto Component 2 at all, despite it being expected to be a key part of GAH. Adjustment, also expected to load onto this factor, shows a negative cross loading. The third component shows little relevance to anything and does not suggest that a FM factor is a factor within this data set. This unrotated analysis showed cross loadings of Sociability, Adjustment and Power, albeit with very low weightings. The theory did not suggest that Power would be part of a GAL factor, but it was hypothesised to form part of a GAH factor. Sociability, while cross loading onto Component 1 and Component 2, loads very weakly onto Component 2, and it was expected that a rotational analysis would place this into one or other of the factors of GAH and GAL. Adjustment cross-loaded onto both factors of GAH and GAL; positively onto GAL, and negatively onto GAH.

Again, there is little support for a clear FM factor, with only two scales of the MVPI in the third Component; Security and Altruistic. Some cross-loadings from Table 5.4 above suggested it would be worthwhile to do rotational analysis using both oblique and orthogonal rotations which were conducted, and are outlined below (Table 5.6).

Table 5.6 *Results from a MLE factor analysis (Specified for three factors and unrotated)*

	Component			Communalities	
	1 GAL	2 GAH	3 FM	Initial	Extracted
Sociability	.66	.41		.58	.65
Ambition	.66			.54	.53
Affiliation	.63			.51	.41
Adjustment	.61	-.55		.57	.70
Interpersonal Sensitivity	.60			.50	.43
Inquisitive	.49			.54	.28
Power	.46	.43		.52	.42
Learning Approach	.46			.27	.22
Commerce				.39	.35
Science				.48	.23
Prudence		-.61		.49	.62
Recognition		.60		.47	.53
Hedonism		.56		.42	.32
Aesthetics				.29	.19
Security			.74	.39	.57
Altruistic			.43	.37	.31
Tradition				.27	.17
KMO	.76				
Goodness of Fit Test	Chi-Square	*df*	Sig.		
	3297.29	88	<. 001		
Extracted sums of squared loadings					
Component	Eigen Value	% of Variance	Cumulative %		
1	3.33	19.59	19.59		
2	2.17	12.77	32.36		
3	1.45	8.51	40.87		

Note: Loadings >.4 were not reported

5.4.4 Maximum Likelihood Estimation Factor Analysis with three factors using Oblimin rotations

Given the lack of clarity for distinct higher order factors in Table 5.6, it was decided to run MLE again, specifying for three factors, but rotating them with both oblique and orthogonal rotations (see Table 5.7). The choice for running two is that there were some cross-loadings in Table 5.6, but they were not very clear. The few loadings that were apparent were also low (>.5). It was expected that these rotations would show either clearer cross loadings using Oblimin rotation (oblique) or more distinct higher order factors using Varimax rotation (orthogonal) after rotation, and help to define any potential higher order factors within the data. Due to there being three cross-loadings, an oblique rotation (Direct Oblimin) was selected as the underlying factors appeared to show some correlation, even if fairly low correlations, and rotation would demonstrate the extent of correlation between these factors. The results of this analysis can be seen below in Table 5.7.

Previous analyses did not identify a clear factor solution, and rotating the factor analysis was expected to offer a clearer result. Direct Oblimin was used as a way of simplifying the factors in order to minimising the cross loadings. Three clear higher order factors emerged (all with Eigenvalues >1), accounting for 41% of the variance. Component 1 clearly related to Getting Along, and included the hypothesised scales of Adjustment, Interpersonal Sensitivity and Affiliation, as well as Sociability. The Oblimin rotation showed just one cross-loading: Sociability, which loaded more highly onto GAL than GAH, in contradiction to Hypothesis 3. Component 1 contained the scale of Ambition which was not hypothesised to form part of GAL. Component 2 showed a partial relationship to the hypothesised higher order factor of GAH, containing the scales of Recognition, Power, Commerce, Hedonism and Sociability. This will be discussed below. The third component, while distinct, did not in fact relate to anything to do with FM. The scales which formed Component 3 were Security, Prudence, Altruistic and Traditional, more closely related to Conscientiousness factor, or indicative of a somewhat conservative personality, than to FM. Direct Oblimin rotation was used in this analysis as cross loadings in Table 5.4 indicated some relationships between the scales. However, this analysis showed just one cross-loading, that of Sociability (Table 5.7).

Table 5.7 *Results from a MLE factor analysis (specified for three factors with Oblimin rotation)*

	Component			Communalities	
	GAL	GAH	FM	Initial	Extracted
Adjustment	.72			.57	.70
Ambition	.72			.53	.53
Interpersonal Sensitivity	.63			.50	.43
Sociability	.61	.55		.58	.65
Affiliation	.59			.51	.41
Learning Approach	.44			.27	.21
Inquisitive	.43			.54	.28
Recognition		.72		.48	.53
Power		.61		.52	.42
Commerce		.54		.39	.35
Hedonism		.52		.42	.32
Aesthetics		.43		.29	.19
Science				.48	.23
Security			.62	.39	.57
Prudence			.67	.49	.62
Altruistic			.48	.37	.31
Traditional			.41	.27	.17
KMO	.76				
Goodness of Fit Test	Chi-Square	df	Sig		
	3297.29	88	<.001		
Rotated sum of squared loadings					
Component	Eigenvalue	% of Variance	Cumulative %		
1	3.30	19.59	19.59		
2	2.17	12.77	32.36		
3	1.447	8.510	40.87		

Note: Loadings >.4 were not reported

5.4.5 Maximum Likelihood Estimation Factor Analysis specified for three factors with Varimax rotation

Given the paucity of cross-loadings in the results above, and the fact that an orthogonal rotation would force the one cross-loading scale into one factor or another, it was decided to conduct a Varimax rotation. Varimax rotation attempts to maximize the variance for clearer results by forcing the scales into one factor or another. With the sole cross-loading scale in Table 5.7, it was seen as the most appropriate analysis, as it can now be expected that the two components of getting along and getting ahead are distinct, and thus require an orthogonal analysis. The results of this can be seen in Table 5.8.

The results were almost identical to the Oblimin rotation. Varimax rotation onto three factors did result in three clear factors which accounted for 41% of the variance. The only scale which cross-loaded was Sociability. The third factor, FM, did not show any relationship to the theory, nor any indication that there was such a factor within the data. ST argues that FM is a key determinant of individual motivation, and it was expected to be found here. No such factor has emerged and further analyses, investigating just two higher order factors, was conducted in order to ascertain how distinct the two higher order factors of GAH and GAL might be, given the reduction of scales onto two higher order factors, rather than three. In addition, Ambition loaded onto the Getting Along factor, which was not hypothesised. The theory argued that Ambition related to individuals who want to get ahead, achieve status and be seen to do well, rather than to those who want to get on with others, and will be discussed in Chapter 10. Given the strong support for just two higher order factors, it was decided to conduct further MLE analyses, both for clarity and to ensure that all the data had been thoroughly investigated. The results of these can be seen in Tables 5.9, 5.10 and 5.11, below.

Table 5.8 *Results from a MLE factor analysis (specified for three factors with Varimax rotation)*

	Component			Communalities	
	GAL	GAH	FM	Initial	Extracted
Adjustment	.74			.57	.70
Ambition	.73			.54	.53
Interpersonal Sensitivity	.61			.50	.43
Sociability	.57	.54		.59	.65
Affiliation	.56			.51	.41
Learning Approach	.41			.28	.21
Inquisitive	.40			.54	.28
Recognition		.72		.47	.53
Power		.60		.52	.42
Commerce		.54		.40	.35
Hedonism		.53		.42	.32
Aesthetics		.43		.30	.19
Science				.47	.23
Security			.70	.40	.58
Prudence			.65	.50	.62
Altruistic			.45	.37	.31
Tradition			.40	.27	.17
KMO	.76				
Goodness of Fit Test	Chi-Square	*df*	Sig		
	3297.29	88	<.001		
Rotated sums of squared loadings					
Component	Eigenvalue	% of Variance	Cumulative %		
1	2.79	16.43	16.43		
2	2.57	15.03	31.46		
3	1.60	9.40	40.87		

Note: Loadings >.4 were not reported

5.4.6 Maximum Likelihood Estimation Factor Analysis specified for two factors

Given the support for two higher order factors of GAH and GAL, shown in Table 5.8 above, it was thought that further MLE analyses would seek to find a more parsimonious model, as well as ensure that all the data had been thoroughly investigated. A further MLE analysis, loading onto just two factors, and unrotated, was conducted, the results of which can be seen in Table 5.9 below. Two distinct factors emerged, and the scales of the previous third component were now placed into one or other of the two components. Two factors accounted for 32% of the variance.

Component 1 related closely to the higher order factor of GAL and included the scales of, in order of weightings, Ambition, Adjustment, Sociability, Affiliation, Interpersonal Sensitivity, Inquisitive, Learning Approach and Power. Ambition and Power, however, were not hypothesised to form part of this higher order factor. Ambition and Power are, intuitively, connected to getting ahead of others, and in seeking status and recognition. Nevertheless, they form part of the GAL factor here and Ambition has shown up in several previous factor analyses outlined above. This will be discussed at the end of the chapter.

Component 2 related to the higher order factor of GAH and included scales of, in order of weightings, Recognition, Hedonism, Power, Prudence and Commerce. Analysis onto two factors showed a clearer relationship to the underpinning research, but some cross loadings were still present. Two cross loadings, Adjustment and Power, indicated the need for rotations, and both oblique and orthogonal were conducted in order to fully explore the data within the two factors. The cross loadings showed that Adjustment had a negative correlation to GAH and Power a slightly lower cross loading for GAL than for GAH. This will be discussed at the end of the chapter. Results can be seen in Table 5.9 below.

Table 5.9 *Results from a MLE factor analysis (specified for two factors unrotated)*

	Component		Communalities	
	1	2	Initial	Extracted
Ambition	.66		.59	.46
Adjustment	.64	-.56	.57	.72
Sociability	.63		.58	.53
Affiliation	.62		.51	.40
Interpersonal Sensitivity	.61		.50	.43
Inquisitive	.48		.54	.27
Learning Approach	.46		.27	.21
Altruistic			.37	.13
Science			.48	.16
Tradition			.27	.05
Security			.39	.01
Recognition		.66	.47	.54
Hedonism		.56	.42	.38
Power	.45	.48	.52	.43
Prudence		-.47	.49	.33
Commerce		.41	.39	.30
Aesthetics			.29	.17
KMO	.76			
Goodness of Fit Test	Chi-Square	*df*	Sig.	
	4984.57	103	<.001	
Extracted sums of square loadings				
Component	Eigen Value	% of Variance	Cumulative %	
1	3.26	19.20	19.20	
2	2.17	12.77	31.97	

Note: Loadings >.4 were not reported

5.4.7 Maximum Likelihood Estimation Factor Analysis specified for two factors with Oblimin rotation

Due to some cross loadings showing in Table 5.9, albeit only two – Adjustment and Power – further analysis using oblique rotation was conducted. The results can be seen in Table 5.10 below. These results are, in fact, less clear than previous results. The results show three cross loadings: Affiliation, Sociability and Inquisitive. The cross loadings onto Inquisitive are low and almost identical on each higher order factor (.40 & .41). It did not account for very much variance, and could be argued that it demonstrates very little impact on either GAH or GAL.

Affiliation and Sociability are both aspects of getting on with others, though it might be argued that affiliation is driven by a need to be part of a group, and to feel something in common with others, whereas sociability might be seen as being active in a social environment in order to achieve status, whereby interaction with others allows for greater social movement. This could be why Sociability loads more highly onto Component 2, (GAH) and Affiliation more highly onto Component 1 (GAL). To clarify, and to ensure every single aspect of this data was thoroughly investigated, it was decided to run one last statistical analysis to maximise any rotation outputs. Empirically, the data was showing a preference towards orthogonal analysis, and a Varimax rotation was conducted specifying to load onto two factors. Table 5.10 shows the results of this analysis.

Table 5.10 *Results from a MLE factor analysis (specified for two factors with Oblimin rotation)*

	Component		Communalities	
	1	2	Initial	Extracted
Adjustment	.78		.57	.72
Ambition	.68		.54	.46
Interpersonal Sensitivity	.65		.50	.43
Affiliation	.55	.42	.51	.40
Prudence	.47		.49	.33
Learning Approach	.44		.27	.21
Altruistic			.37	.13
Tradition			.27	.05
Security			.39	.01
Recognition		.73	.47	.54
Power		.68	.52	.43
Sociability	.48	.63	.58	.53
Commerce		.54	.39	.30
Hedonism		.49	.42	.32
Inquisitive	.40	.41	.54	.27
Aesthetics		.40	.29	.17
Science			.48	.16
KMO	.76			
Goodness of Fit Test	Chi-Square	*df*	Sig	
	4984.57	103	<.001	
Rotation sums of squared loadings				
Component	Eigenvalue	% of variance	Cumulative %	
1	3.26	19.20	19.20	
2	2.17	12.77	31.97	

Note: Loadings >.4 were not reported

5.4.8 Maximum Likelihood Estimation Factor Analysis specified for two factors with Varimax rotation

The Varimax analysis demonstrates two distinct components which could relate to GAH and GAL. It also offers the clearest interpretation of the data so far (see Table 5.12 below). Furthermore, it is empirically and statistically meaningful. Varimax rotation shows results almost identical to the Oblimin rotation (Table 5.10) but with much more clarity. The two components, which accounted for 32% of the variance, relate to two higher order factors of GAH and GAL (see Table 5.11).

Table 5.11 *Two possible higher order factors of GAL and GAH from Varimax rotation*

GAH includes scales:	GAL includes scales:
Recognition (.74)	Adjustment (.82)
Power (.63)	Ambition (.67)
Sociability (.61)	Interpersonal Sensitivity (.65)
Commerce (.53)	Prudence (.51)
Hedonism (.51)	Affiliation (.50)
Aesthetics (.40)	Learning approach (.42)

Component 1 GAL, shows Adjustment as the highest loading scale, followed by Ambition and Interpersonal Sensitivity. Component 2, GAH, shows Recognition as the highest loading scale, followed by Power and Sociability. The results show one cross loading scale of Sociability, loading onto Component 1, but with minimal influence (.41) on GAL. The HPI and the MVPI have been extensively analysed here to search for three higher orders factors. This current thesis has found two distinct higher order factors: GAL and GAH; but not that of FM. The analysis shows that personality differences will have a significant impact on whether someone gets along with others, when compared to getting ahead of them. These results will be discussed further below.

Table 5.12 *Results from a MLE factor analysis (specified for two factors with Varimax rotation)*

	Component		Communalities	
	1	2	Initial	Extracted
Adjustment	.82		.57	.72
Ambition	.67		.54	.50
Interpersonal Sensitivity	.65		.50	.43
Prudence	.51		.49	.33
Affiliation	.50		.50	.40
Learning Approach	.42		.27	.21
Altruistic			.37	.13
Tradition			.27	.05
Security			.39	.01
Recognition		.74	.47	.54
Power		.63	.52	.43
Sociability	.41	.61	.58	.53
Commerce		.53	.39	.30
Hedonism		.51	.42	.32
Aesthetics		.40	.29	.17
Inquisitive			.54	.27
Science			.48	.16
Goodness of Fit Test	Chi-Square	*df*	Sig	
	4984.57	103	<.001	
Rotation sums of squared loadings				
Component	Eigenvalue	% of variance	Cumulative %	
1	2.78	16.37	16.37	
2	2.65	15.60	31.97	

Note: Loadings >.4 were not report

5.5 Discussion

This exploratory study has sought to investigate whether higher order factors of personality, reflecting the key drivers of ST (GAH, GAL, & FM) would be found within the HPI and the MVPI (Hogan, 1976; Hogan & Hogan, 1987). Analysis began with an investigation into all the scales of the HPI and the MVPI, seeking to find any correlations between the scales of the two measures. Parallel analysis was conducted to determine the number of factors to retain from an EFA, following which three latent factors were found within the data. The data was further analysed using EFA and MLE. Oblique and orthogonal rotations were also used in order identify factor structures more clearly, and understand relevant cross-loadings.

H1: Factor analysis of both the HPI and the MVPI will identify three higher order factors: GAH, GAL and FM.

H1 was partially supported. While two higher order factors were found that theoretically and empirically represent GAL and GAH, a predicted third factor that represented FM was not identified in the analysis. The scales of Inquisitive, Aesthetics, Learning Approach and Scientific were predicted to load on to this final higher order factor. Learning Approach and Inquisitive, two key scales for suggesting that an individual might be seeking to find meaning, were found to be most closely be related to GAL. Given that none of the statistical analyses conducted here showed any indication of a higher order factor of FM, it is possible that no such factor exists within the HPI or the MVPI. This contradicts the underpinning ST that argues for three behavioural drives of an individual (Hogan, 1976).

Further, the measures here are based on observer perceptions of work place behaviours. FM reflects the insider view, is highly personal, and may not be so apparent to observers, thereby providing a possible explanation why a two-factor solution was identified. Additionally, it is also possible that the use of a Varimax rotation masked the presence of an FM factor, as relevant variables (e.g. Aesthetics & Learning Approach) were loaded on to either the GAH or GAL dimension.

It is also noteworthy that the present research is the first to report on the joint factorial structure of both MVPI and HPI. While the theoretical distinction of identity and reputation makes conceptual sense, the use of each of these two assessment tools for different purposes and predictions means the empirical (rather than conceptual) overlap between the instruments has remained unexamined. And yet, practical coaching and leadership development interventions often focus on aligning both profiles: e.g., helping coachees be seen as they see themselves, and as Hogan and Smither (2001) noted, "social skills translate identity into reputation". Although both the HPI and MVPI are based on self-reports, the HPI scoring algorithm translates people's self-presentation into reputation by contrasting their answers to an archival database consisting of 360-degree ratings.

H2: It is expected that, based on literature in Chapter 2, GAH will include the scales of Adjustment, Ambition, Power, Prudence, Recognition and Sociability.

H2 was partially supported. The three main scales of Recognition, Power and Sociability are indicative of a higher order factor of GAH and this will be explored further in next empirical study. Getting along with others requires behaviours "that gain approval of others, enhances co-operation and serves to build and maintain relationships" (Hogan & Holland, 2003, p.103), and Adjustment, as well as Affiliation, Altruism, Interpersonal Sensitivity, and Prudence were predicted to form a higher order factor of GAL. Adjustment, Ambition, Power, Prudence, Recognition and Sociability, were predicted to load onto a GAH higher order factor. Power, Recognition and Sociability formed part of GAH, though Adjustment, Ambition or Prudence did not. Although it makes empirical and theoretical sense to have Recognition, Power and Sociability load onto GAH, it is counterintuitive not to see Ambition in this higher order factor. Ambition, associated with the degree to which someone seeks status and achievement, was predicted to be part of GAH as ambition is needed to give impetus to the drive to do well, to achieve status and to attain personal goals. That it is not part of GAH will be discussed later.

Recognition relates to fame, status and high visibility, and such people show an aptitude for generating opportunities where they can self-promote and visibly display their talents (Hogan & Hogan, 1996). Recognition was the most prominent scale to load onto GAH

in this analysis. Additionally, Power is associated with how competitive someone is, how influential they want to be and how much worldly success they want to achieve. Power is closely related to recognition, for without power it is unlikely recognition would be forthcoming. To achieve power, and to become recognised, we need to mix with others, whether at work or in a social situation, necessitating a level of sociability.

Sociability is the third weighted scale in this higher order factor. While Sociability cross-loaded onto GAL in earlier analyses, a decision was made to force it into either GAH or GAL as the cross-loading was low, and it was the sole cross loaded scale. This resulted in it loading onto GAH which does not mean those with a GAL preference are not sociable, rather than those on GAH see Sociability as a means to get ahead. It is not clear whether such individuals are sociable by nature, or whether they see Sociability as a useful trait, to be used in an expedient way to get to know those who will be of use to them in getting ahead. Without the trait of Sociability, one is unlikely to make useful, and enjoyable, contacts that are needed to get ahead. There is a fine line between being sociable for the sake of friendship, interaction and a need for affiliation which might be found in the GAL factor, and the use of one's social skills to manipulate others. In such a case, sociability might be seen as a devious use of social skills where the charm and confidence of social personalities develops into what is often termed 'the dark side of personality' manifesting in arrogance and manipulation (Hogan & Hogan, 1997).

The other three scales to load onto GAH are Commerce, Hedonism and Aesthetics. While these were not predicted to load onto GAH, their inclusion makes theoretical sense. Commerce relates to the ability to generate business, to enjoy competition and challenges, and to ensure that the results of success are accrued. Additionally, Commerce indicates someone who wants to be influential, again relating to Recognition and Power (Hogan & Hogan, 1997). Empirically, and theoretically, Commerce fits very well with the GAH factor and most likely contributes to the success of those who get ahead. Hedonism is associated with enjoying sensory pleasures and the 'good life', including a lifestyle of pleasure and variety, excitement, and self-indulgence (Hogan & Hogan, 2007), whereas Aesthetics is associated with art, literature and enjoying stylish surroundings.

H3: It is expected that GAL will include the scales of Adjustment. Affiliation, Altruism, Interpersonal Sensitivity, Prudence and Sociability**.**

H3 was partially supported. The GAL Higher order factor included Adjustment, Interpersonal Sensitivity, Prudence and Affiliation as predicted. Adjustment was the most prominent scale in this factor. Adjustment is associated with being even-tempered, tolerant of others, and resistant to stress. It would indicate someone who was stable in terms of emotionality, and not prone to anxiety, moodiness, irritability or hostility, characteristics that are expected to impede getting along with others. Interpersonal sensitivity reflects very good social skills, including tact, diplomacy and sensitivity to others. Prudence suggests someone who is considerate, reliable and conscientious, and Affiliation is indicative of someone keen to work with others, who attempts to get along with them and who actively seeks others to work with.

The scales of Ambition and Learning Approach were not expected to load onto GAL. Ambition was the second highest loading onto GAL, in contradiction to ST. Altruism was predicted to load onto GAL but was not found to form part of this higher order factor. Given how high the loading for Ambition was, it is not surprising that Altruism was not part of the GAL factor. Altruism indicates someone who will put others first, and help others often at a cost to oneself. Ambition is the opposite of helping others, in that the need to succeed for oneself is what drives such individuals, and their need to achieve their own goals is facilitated by their personal ambition, rather than in helping others. Ambition loaded onto GAL but not GAH. This suggests that those who want to do well, realise that they need to get along with others in order to achieve goals. Their skill at getting along with others may be driven by their ambition to success, more so than those with a high need to achieve status, power and recognition. A stable emotional nature, indicated by Adjustment, coupled with good interpersonal skills and high Ambition forms part of the higher order factor of GAL and in getting along, and gaining the support of those around them, people may get ahead much sooner than merely aiming for personal goals, without taking into account the social interest of such interactions with others (Adler, 1927:1932).

H4: It is expected that FM will include the scales of Aesthetics, Inquisitive, Learning Approach and Scientific.

The analysis found no support for an FM factor, and the scales that formed part of a third component in any of the analyses did not reflect those for a third higher order factor of FM. It was predicted that FM would include Aesthetics, Inquisitive, Learning Approach and Scientific and the results show that H4 was not supported. That FM was not found in any of the statistical analyses does not mean that people do not seek meaning, per se, in their work and relationships, but rather that they find meaning through the two higher order factors of GAH or GAL. Both these higher order factors contained elements of FM. The theory that individuals seek to find meaning and purpose was described extensively in Chapter 2, where Frankl (2006) argues it is the greatest driver in human behaviour (Frankl, 2006). As a basic tenet of ST, FM was expected to be found within the two measures of the HPI and MVPI. The HPI scales included Inquisitive which seemed the essential scale for someone seeking to find meaning. Certainly, making sense of our lives seem intuitively compelling for someone who almost died in the Auschwitz concentration camp. For Frankl, meaning came from three sources: what he termed purposeful work, love and courage in the face of difficulty, or as we might say today, resilience and fortitude (2006). That is not necessarily the case for work, per se, and FM may not be as fundamental a drive as Hogan and Hogan (1997) assert.

H5: It is expected that Adjustment will be included in the higher order factors of GAH and GAL.

H5 was not supported. While research has argued that both GAH and GAL would contain Adjustment (Hogan & Holland, 2003), this was not the case here. The clearest interpretation of the data (MLE Table 5.12) found two distinct higher order factors of GAH and GAL but Adjustment was included in only the GAL factor (.82). Hogan and Holland's (2003) research argues that the factors of Adjustment, Prudence and to some extent Ambition are all valid predictors for both profiles of GAH and GAL (Hogan & Holland 2003). Nevertheless, while Hogan and Holland's (2003) study showed that clear performance criteria matched against personality scales are useful predictors to show a GAH and GAL profile, they only used the HPI to do so. The HPI measures reputation and Hogan and Holland's (2003) study has no information from the MVPI which shows identity.

This study has investigated both the HPI and the MVPI and has found partial support for two higher order factors, albeit containing different aspects of personality to Hogan and Holland's earlier research (2003). Given the results of Hogan and Holland's study (2003), using just the HPI, it is argued that the lack of clarity for higher order factors merits further investigation. Aspects of the MVPI such as Affiliation, Power and Recognition are all contained within the two, for the moment, apparently distinct higher order factors of getting ahead and getting along. This has implications for the clarity of higher order factors and any distinction between the factors.

5.5.1 Criticisms and Limitations

The main criticisms of the study are related to the limitations of the HPI scales themselves, and the reliability of this dataset. The data set in this study were donated for research purposes and have allowed a preliminary research investigation into which scales of the HPI relate to GAH, GAL or FM. Initially it was anticipated that the sub-scales, as well as the main scales, would be included. Item level responses are related subthemes contained within each primary scale of the HPI. Because the items cluster together, they are referred to as Homogenous Items Composites (HICs). The primary scale of Adjustment, for instance, is considered an important scale within the GAL higher order factor. Adjustment, however, covers a wide range of sub scales including anxiety, guilt, moodiness, irritability, somatic complaints and attachment, all of which may be more influential in how someone gets along that others.

Item level responses were not available due to organisational confidentiality (HAS), but this is something that would be considered for future research, to gain a greater understanding of the HPI, and so see how far each scale item of the HPI contributes to the higher order factors of GAH and GAL.

HICS allow for a deeper investigation into each scale and for a richer analysis, For example, the scale of Sociability includes HIC items: "Likes Parties, Likes Crowds, Experience Seeking, Exhibitionistic, Entertaining", and Adjustment, a key component

of GAL includes HIC items: Empathy, Not Anxious, No Guilt, Calmness, Even Tempered, No Somatic Complaints, Trusting, Good Attachment. Such items give a much more comprehensive explanation for behaviours and would have enriched the study.

Future research would seek to include all sub-scales of any measures used, and this is certainly something that needs to be considered for any future research into the HPI. Nevertheless, and notwithstanding the limitations of this, the major scales of the HPI indicate key personality differences in behaviour, in a work setting, and this research into which HPI scales relate to GAH, GAL and FM has not been conducted before. Furthermore, the data is archival from 2009-2011 and HAS are not able to provide further details regarding missing data, other than due to USA legislation and discrimination law, missing demographics reflect participants' hesitancy to record this. While understandable, this has implications for the reliability of the data and the analysis. Despite the limitations, which are acknowledged, it is argued that the research adds to the understanding of how personality differences manifest through different styles of working, in line with ST and measured by the HPI and the MVPI. The research also outlines new directions for subsequent research to confirm, and extend, the presented findings and will be discussed more fully in Chapter 10.

5.5.2 Development of the research

The data analysed here requires further investigation. This will be conducted using confirmatory factor analysis (CFA) to ascertain the extent to which the model is supported by the data. The data outlined above shows stronger support for a Varimax (orthogonal) model than for an Oblique (oblimin) model. Oblique rotations were applied because the underlying factors are, according to theory, correlated, although not highly. It is expected that when factors are highly correlated oblique rotations are to be used, but in this data, they were found not be highly correlated.

The empirical associations from the output of the first principal axis analysis showed that certain items cross-loaded (i.e. .4 on both GAH and GAL factors), which justified

an oblique analysis. Nevertheless, the MLE analyses did not find support for this. It was expected that Adjustment would be key to both GAL and GAH but this study did not find this to be the case either. Adjustment related only to GAL. It seems that some scales are inimical to the other, so for instance, Prudence and Altruism indicating a caring, conscientious, helpful individual, may be detrimental for those who want to get ahead. Nevertheless, to do well in life we need to consider the social interest of others (Adler, 1979), and as social animals we need to ensure that we get on with others to survive, both physically and psychologically. It is counterintuitive to expect individuals to do well without the support and help of others. Nor is it assumed that we can get ahead without the backing of those with whom we work. Given this, it is argued that a more robust, distinct, and revealing model be found through using Confirmatory Factor Analysis (CFA), conducted in the second empirical chapter (Chapter 6) following this.

Chapter 6: Study 2 – Confirmatory Factor Analysis and Structural Equation Modelling of GAH and GAL Higher Order Factors

6.1 Introduction

This thesis began with an investigation into higher order factors of personality within the HPI and the MVPI and, based on ST, it was expected that three higher order factors (GAH, GAL and FM) would be found within the two measures (HPI and MVPI). Only GAH and GAL, not FM, were identified as higher-order factors. The study in this chapter seeks to confirm the findings of the previous chapter.

6.2 An Investigation into a Higher Order Factor of GAH

Based on the preceding literature, it was predicted that Adjustment, Ambition, Power, Prudence, Recognition and Sociability would load onto GAH. As demonstrated through the orthogonal and oblique two factor solutions in the previous chapter, this hypothesis was partially supported. Power, Recognition and Sociability were included in GAH, though Adjustment, Ambition and Prudence were not. Ambition concerns having a reputation for seeking status and achievements, the desire to be seen doing well, as well as to attain personal goals, and it was expected to form a significant part of the GAH factor. Adjustment did not load onto GAH as expected according to Hogan and Holland's (2003) research, that it is a "valid predictor for both getting along *and* getting ahead at work (p.106). Prudence is concerned with being conscientious, and reliable, and also did not load onto GAH. These findings are discussed below.

In the final analysis of Chapter 5, the only scale that cross-loaded onto both GAH and GAL was Sociability (Table 5.12); GAL (.41) and GAH (.61), and it was argued that

Sociability, rather than demonstrating a need to get along with other people, was instead seen as a means to get ahead, and that being sociable and interacting with others was a way of getting to know people *in order to* get ahead. GAH included the scales of Commerce, Hedonism and Aesthetics, which though not expected to do so, makes theoretical sense: Commerce relates to an enjoyment of competition, challenges and to generating new business, as well as being seen as successful, all of which relates to Recognition and Power (Hogan & Hogan, 1997); Hedonism is associated with a desire for variety, excitement and pleasure seeking (Hogan & Hogan, 2007); and Aesthetics indicates a desire for art, literature and cultural environments, factors with fit easily with a GAH style.

6.3 An Investigation into a Higher Order Factor of GAL

The key factors that allow us to build, and maintain, good working relationships with others, i.e. those that form a higher order factor of GAL, were expected to include Adjustment, Affiliation, Altruism, Interpersonal Sensitivity, and Prudence. The previous chapter provided some support for this hypothesis. GAL was found to include Adjustment, Affiliation, Ambition, Interpersonal Sensitivity, and Prudence. Adjustment was the most prominent scale followed by the scale of Ambition.

The results in Chapter 5, however, would seem to contradict ST. GAL suggests a need to put others first and to do what is best for the group, and Altruism was predicted to load onto GAL. Given the loading for Ambition above, it is not surprising that Altruism was not part of the GAL factor. Altruism indicates someone who will put others first, and help others even at a cost to themselves. Ambition is the opposite in that the need to succeed is what drives such individuals, and their need to achieve their own goals is facilitated by their personal ambition, rather than in helping others. This result suggests that those who want to do well get along with others, or that those who are ambitious, attempt to get along with others in order to do well. Certainly, GAL and Ambition appear to be related, and further research is needed to further investigate this relationship. Whereas the first empirical study in Chapter 5 was exploratory, and found two distinct higher order factors containing scales from both HPI and the MVPI (see

Table 5.11 for GAH and GAL factors), this second study will seek to confirm which scales form part of the two higher order factors, GAH and GAL. The mixed results of the first investigative empirical study indicated a need for theoretically driven analysis, and a Confirmatory Factor Analysis was conducted following this. GAH included Recognition, Power, Sociability, Commerce, Hedonism and Aesthetics, GAL included Adjustment, Ambition, Interpersonal Sensitivity, Prudence, Affiliation and Learning.

6.4 Hypotheses

Based on the previous chapter's findings, the following hypotheses were tested using Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM):

H1: Recognition, Power, Sociability, Commerce, Hedonism and Aesthetics will load onto **GAH**;

H2: Adjustment, Ambition, Interpersonal Sensitivity, Prudence, Affiliation and Learning will load onto **GAL**;

H3: **GAH** and **GAL** will correlate with workplace performance as assessed via supervisor ratings. It is expected that the same structure of GAH and GAL from the previous chapter will be replicated.

6.5 Method

6.5.1 Participants

This archival dataset, the same as that used in Chapter 5, was offered for use in this research study by Hogan Assessment Systems (HAS, 2011) and the data collected by HAS between 2009 and 2011. In total, 2104 participants, Females, N=720 (34.2%); Males, N=1027 (48.8%); Missing, N=357 (17%) took part in the current study. Ages ranged from 19 to 79 years (M=39.58, SD=9.51). The participants' test scores from

nine independent studies were combined in this study to obtain a robust number for preliminary analyses. The participants were predominately middle and senior managers. All participants were US employees and the occupational sectors included: 26% Hospitality, 19% Construction, 15% IT, 13% Haulage, 9% Missing, 18% Incomplete. The data is archival and was collected between 2011 and 2013 by HAS. Ethnicity included: 22.8% White, 2.1% Black, Hispanic 4.2%, Asian 3.5%, American Indian 1%, Two or More Ethnic groupings, .2%, Other 5.4%, Missing 60.7%. This is an extremely high level of missing data, and HAS explained that strict US discrimination legislation affects practice of data collection where many respondents do not complete information on sex, race or gender if not stipulated as a requirement, because of discrimination practice in the workplace (HAS, 2017), and particularly so with minority groups (Bertrand & Sendhil, 2004). Although both the HPI and MVPI are based on self-reports, the HPI scoring algorithm translates people's self-presentation into reputation by contrasting their answers to an archival database consisting of 360-degree ratings.

Furthermore, HAS explained that it was used for selection and development, and ethnicity is often removed from internal questionnaires (HAS, 2017). The high percentage of missing data for ethnicity is a criticism of this dataset, and is discussed below. Despite missing data, sex was included for analysis as the data submitted was considered a large enough number to analyse. Participants completed two psychometric measures (HPI and MVPI) as part of internal employee development programmes across various organisations. Permission was requested from all participants for their anonymous data to be used in any future research studies.

6.5.2 Measures

6.5.2.1 The Hogan Personality Inventory - HPI (Hogan & Hogan, 2007) See Table 5.2

6.5.2.2 The Motives, Values and Preferences Inventory - MVPI (Hogan & Hogan, 2010). See Table 5.3

6.5.2.3 Performance Ratings (Hogan Assessment Systems, Tulsa, 2012)

Nineteen performance indicators were identified and developed by participants' supervisors, in tandem with HAS for use in this study. The indicators were labelled: Achievement Orientation (AO), Active Listening (AL), Building Relationships (BR), Caring (C), Citizenship (CS), Flexibility (F), Industry Knowledge (IK), Influence (I), Oral Communication (OC), Perseverance (P), Organizing (O), Resource Management (RM), Responsibility (R), Sales Ability (SA), Service Orientation (SO), Stress Tolerance (ST), Teamwork (T), Time Management (TM) Interpersonal Sensitivity (IS).

The performance indicators used were designed specifically for this organisation in tandem with HAS and the client organisation's supervisors (see Appendix 6.1). Further details on the performance indicators was not forthcoming from HAS due to client confidentiality. The limitations of this are discussed below. Supervisors evaluated individual performance using a behavioral checklist. This checklist is based on a proprietary competency model created by HAS to rate job performance based on key competencies critical for each role, within each organisation. The performance ratings were based on job analysis results and conversations with stakeholders about the key competencies seen as critical for each role. For this study, job analysis was conducted by expert stakeholders (line managers, supervisors, job holders) who rated the importance of each of the 62 competencies in the Hogan Competency Model, and which resulted in 19 broad competencies relating to job performance outcomes (see Table 6.5), for this study (HAS, 2009).

6.5.3. Procedure

After giving consent and being reassured that individual responses would remain confidential, all participants logged on to the HAS's website (URL of login password) via a unique login password. The HPI and MVPI were presented on the computer screen in order for participants to complete. Participants were given the opportunity to ask questions on completion of the questionnaire. They were informed that their results would be given back in developmental feedback coaching sessions at a later date, and that individual results would be archived for future research by HAS. They were offered the opportunity to withdraw from the process at any time before testing began, as well as during the testing process.

Supervisor ratings of workplace performance were completed during appraisals with individual employees. Performance was rated according to 19 criteria designed by the organisations in the study, which included those of general manager level in marketing, the emergency services, sales, construction and financial services (see Table 6.5 for performance criteria). The results were collected by HAS between 2009-2011. It was explained to all employees that the data would be used for future research by HAS and that all personal data would be anonymous. Employees were given the opportunity to ask questions and to refuse to allow their data to be given for research purposes.

6.6 Results

6.6.1 Bivariate correlations and descriptive statistics of demographics, HPI & MVPI

To confirm the previous chapter's findings, steps were taken to replicate the factor structure using both exploratory and confirmatory factor analysis (EFA/CFA) with new data. Before any analyses were carried out, the data was cleaned for any missing values and anomalies, while ensuring the data was normally distributed (Judd, McClelland, & Ryan, 2009). As noted in the previous chapter, internal consistency estimates are not reported as HAS were not able to provide item level responses for this study, but internal consistency reliabilities of 0.8 from 6 million participant scores are reported in the HPI manual. The limitations of this will be discussed later in Chapter 10.

Bivariate correlations (Table 6.1) were conducted to ascertain the level of inter-correlations between demographics, the HPI and the MVPI. Several clusters of variables showed significant, correlations. For example:

- Adjustment correlated significantly with Ambition, Interpersonal Sensitivity and Prudence;
- Affiliation correlated with Sociability and Interpersonal Sensitivity;
- Sociability correlated with Affiliation and Recognition;

- Scientific correlated with Inquisitive; Tradition correlated with Altruistic;
- Commercial correlated with Power and Recognition ans
- Recognition correlated with Sociability, Commercial and Power.

Noteworthy is the high number of intercorrelations between HPI and MVPI traits, most of which are significant and show positive correlations. This finding is similar to the bivariate correlations found in the previous chapter. Given this, carrying out an EFA to replicate the findings from Chapter 5, was justified.

Table 6.1 *Bivariate correlations & descriptive statistics between demographics, HPI & MVPI*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	M	SD
1. Age	—																		37.21	12.2
2. Gender	-.06*	—																	1.29	.45
3. Adjustment	.10**	-.14**	—																27.07	6.50
4. Ambition	.19**	-.22**	.55**	—															23.42	4.98
5. Sociability	-.05*	-.07**	.06**	.37**	—														13.98	4.67
6. Interp Sens	.08**	.03	.46**	.37**	.28**	—													19.12	2.58
7. Prudence	.06*	.03	.45**	.11**	-.23**	.30**	—												20.4	4.22
8. Inquisitive	-.06*	-.18**	.16**	.23**	.39**	.15**	-.04	—											15.09	4.58
9. Learning App.	.02	.04	.25**	.28**	.19**	.12**	.14**	.36**	—										9.06	3.09
10. Aesthetic	-.02	.14**	-.09**	-.11**	.18**	.03	-.13**	.39**	.18**	—									34.19	7.85
11. Affiliation	.00	-.02	.28**	.36**	.50**	.53**	.09**	.16**	.13**	.04	—								49.36	5.39
12. Altruistic	.05	.09**	.06**	-.02	.08**	.32**	.19**	.18**	.12**	.33**	.29**	—							49.09	6.65
13. Commercial	.05	-.13**	-.02	.16**	.27**	.08**	-.01	.26**	.17**	.19**	.22**	.16**	—						46.29	6.21
14. Hedonistic	-.23**	.11**	-.30**	-.25**	.27**	-.04	-.28**	.06*	-.11**	.26**	.24**	.12**	.18**	—					40.62	6.84
15. Power	.04	-.13**	-.03	.30**	.37**	.08**	-.09**	.25**	.16**	.16**	.32**	.18**	.60**	.25**	—				48.1	6.46
16. Recognition	-.05*	.01	-.26**	.05*	.48**	.00	-.25**	.21**	.05*	.26**	.25**	.10**	.44**	.39**	.51**	—			41.89	7.83
17. Scientific	-.09**	-.11**	.02	-.04	.10**	-.03	.05*	.57**	.28**	.33**	.04	.22**	.28**	.16**	.25**	.19**	—		40.94	7.95
18. Security	-.06*	.13**	-.14**	-.34**	-.33**	-.03	.35**	-.16**	-.08**	.02	-.15**	.24**	.09**	.11**	-.04	.00	.16**	—	42.23	7.26
19. Tradition	.22**	-.03	.08**	.18**	.00	.19**	.16**	.05*	.08**	.09**	.06**	.40**	.24**	-.18**	.24**	.06*	.03	.17**	46.79	6.55

Note: * correlation is significant at $p < .05$ level; ** correlation is significant at $p <. 01$ level. N = 1837. Interp Sens = "Interpersonal Sensitivity". Learning App = "Learning Approach".

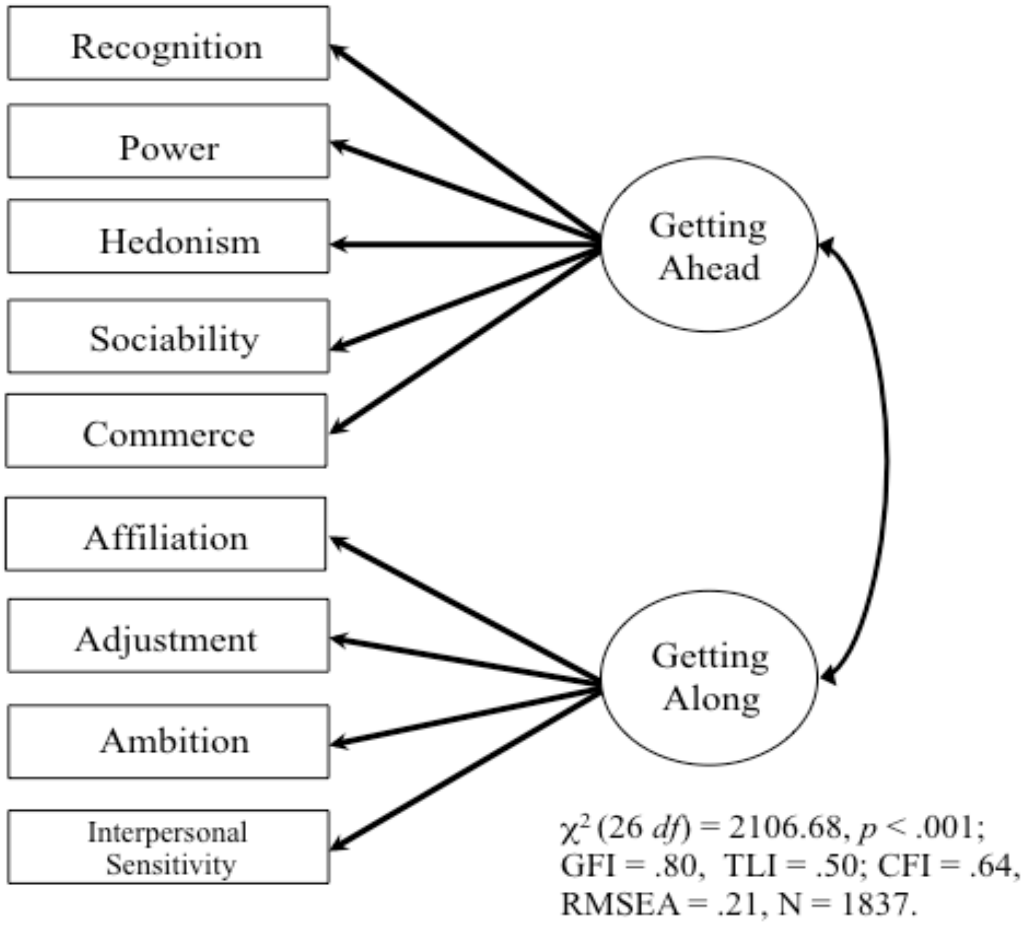
6.6.2 Confirmatory Factor Analysis

In order to confirm the latent factor structure of GAH and GAL, CFA was conducted using Amos 5.0 software (Arbuckle, 2003). Figure 6.1 illustrates the hypothesised two-factor model that was first tested. Two latent variables were specified, representing GAH and GAL, onto which the observed variables that were previously identified in Table 5.10 were loaded. The error terms of the two latent variables were free to correlate.

The model's goodness of fit was assessed via the χ^2 statistic (Bollen, 1989; which tests the hypothesis that an unconstrained model fits the covariance or correlation matrix as well as the given model; $p > .05$ is desired); the Goodness of Fit Index (GFI; Tanaka & Huba, 1985; values close to 1 are acceptable); the Comparative Fit Index (CFI; Bentler, 1990; values above .95 are acceptable); the Tucker Lewis Index (TLI; Brown, 2006; values close to 1 are acceptable); and the Root Mean Square Error of Approximation (RMSEA; Browne & Cudeck, 1993; values of .06 or below indicate reasonable fit for the model). The model first specified did not fit the data (χ^2 (26 *df*) = 2106.68, $p < .001$; GFI = .80, TLI = .50 CFI = .64, RMSEA = .21). Paths were freed or added and variables removed on the basis of AMOS modification indices, expected parameter change statistics, significance levels and standardised residuals. Paths were only added or freed if they made theoretical sense, and after each modification fit indices were checked to ensure improved model fit, and to show which variables loaded more strongly.

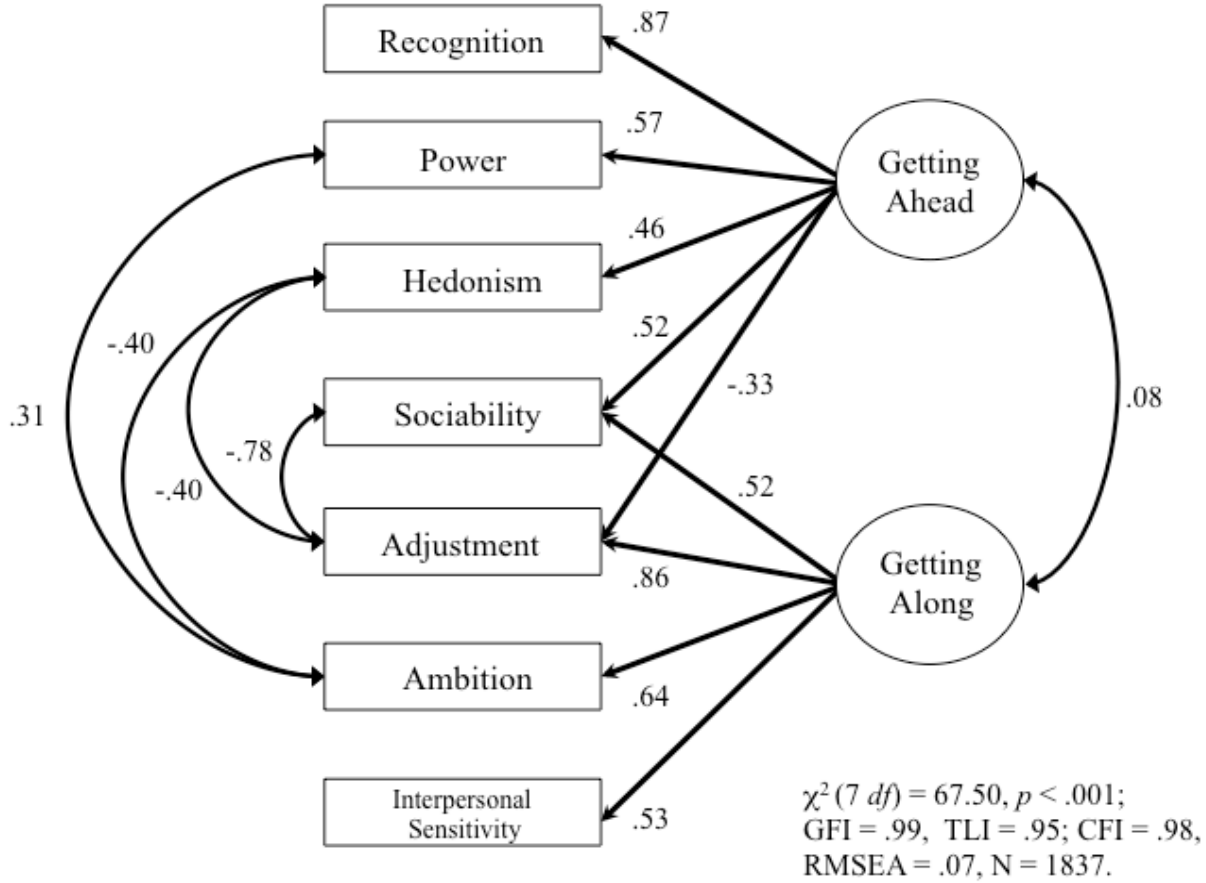
After removing Affiliation and Commerce from the model, as they did not load onto the factors, and allowing Sociability and Adjustment to load onto both latent variables, model fit was achieved (χ^2 (7 *df*) = 67.50, $p < .001$; GFI = .99, TLI = .95, CFI = .98, RMSEA = .07). While Sociability loads onto both latent variables with the same path weight ($\beta = .52$), interestingly Adjustment holds a negative path weight ($\beta = -.33$) when loaded onto GAH and a positive path weight ($\beta = .86$) when loaded onto GAL. The low correlation between the two latent variables suggests that the two factors are discrete when specific variables such as Ambition & Adjustment are free to correlate. See Figure 6.2 for the fitted model.

Figure 6.1 *CFA: The hypothesised two-factor solution*



.

Figure 6.2 *The CFA fitted two-factor solution representing Getting Ahead & Getting Along higher order factors.*



Note: All paths are significant at $p < .001$, except the correlation between GAH and GAL is $p >$

6.6.3 Measurement Invariance

To explore whether the fitted CFA model suitably represents behaviour between genders and ethnicity, that is, is the model invariant between these groups, tests of measurement invariance were conducted. Despite the amount of missing data for ethnicity (60.7%), it was decided to conduct measurement invariance on the data available to fully investigate any possible invariance. While this is not ideal, it was thought the best possible option in this investigatory process and will be addressed in the discussion (Chapter 10). Following the recommendations outlined by Cheung and Rensvold (2002), three invariance tests were conducted: configural invariance (where groups associate the same subsets of observed variables with the same latent factors); metric invariance (the strength of the relationships between items and their underlying constructs are the same for both groups) and; scalar invariance (the strength of the relationship between each item and its underlying construct is the same for both groups). These tests were conducted using the Lavaan R package (Rosseel, 2012) and the chi-square statistic (where significant results suggest variance between groups). Measurement was first tested between genders (males and females) and then between ethnicity (white and other).

6.6.3.1 Measurement Invariance: Gender

Using the previous identified CFA model, but fitting it between the males and females, configural invariance was found ($\chi 2$ (14) = 117.70, $p < .001$; GFI = 1.00; CFI = .97; RMSEA = .09). To test metric invariance the CFA loadings were constrained to be equal. This model's fit was: X^2 (21) = 140.08, $p < .001$. The difference between constrained and unconstrained model was significant: ΔX^2 (7) = 22.38, $p < .001$. This suggests that the strength of the relationships between items and their underlying constructs are not the same for both groups. Next scalar invariance was tested by constraining the loadings and intercepts. This model's fit was X^2 (26) = 237.13, $p < .001$. The difference between this model and the unconstrained model was significant: ΔX^2 (12) = 119.43, $p < .001$. These results demonstrate that there is metric and scalar, but not configural, variance between genders. The results for this CFA are presented in Table 6.2. Variation in factor loadings, alongside correlations, are likely

to explain why measurement invariance was not wholly met, and suggests why there is gender variation in the ways GAH and GAL is expressed within the HPI and MVPI.

Analysis found differences with both gender and ethnicity. With gender, Ambition loaded onto GAL for both men and women, but loaded more onto GAL for men (β .72) than women (β .59). Interpersonal Sensitivity loaded more onto GAL for men (β .67) than for women (β .58). Adjustment and Sociability loaded onto GAL equally for both men and women. Recognition, Power and Hedonism loaded onto GAH equally for men and women. Sociability loaded onto GAH for men (β *.52)* and for women *(*β *.49*) so very little difference. The main difference in GAH was Adjustment which for men was (β -.21) and for women (β -.34). Five key correlations were found with very little difference between men and women. The key difference was between Sociability and Adjustment with correlations for men (-.29) and women (-.56). These results show that women tend to score lower for Adjustment on GAH and this has a negative impact on both GAH and Sociability. Correlations between GAH and GAL was not significant for men, but was for women (.17) suggesting a greater relationship between how women get on with others at work and how well they do in their career.

Table 6.2 *The Results of Fitted CFA Model Across Genders.*

		Male	Female
Latent Variables	Observed Variables	β	β
GAH	Recognition	.85	.90
	Power	.53	.55
	Hedonism	.47	.45
	Sociability	.52	.49
	Adjustment	-.21	-.34
GAL	Sociability	.54	.53
	Adjustment	.85	.84
	Ambition	.72	.59
	Interpersonal Sensitivity	.67	.58
Correlations:	Power ~ Ambition	.27	.37
	Hedonism ~ Ambition	-.27	-.31
	Hedonism ~ Adjustment	-.31	-.29
	Sociability ~ Adjustment	-.29	-.56
	GAH ~ GAL	.02*	.17

Note: All relationships were statistically significant ($p < .001$; two tailed). Non-significant findings are marked *.

6.6.3.2 Measurement Invariance: Ethnicity

The method described above was repeated to investigate measurement invariance between ethnicities. After removing all missing cases, there were 884 individuals who identified as white and 513 who identified as other. As with the gender model, configural invariance was found ($\chi 2$ (14) = 115.7, $p < .001$; GFI = 1.00; CFI = .96; RMSEA = .10). Metric invariance was not found (constrained model fit: X^2 (21) = 136.10, $p < .001$; ΔX^2 (7) = 20.36, $p < .001$), nor was scalar invariance (constrained model fit: X^2 (26) = 247.53, $p < .001$; ΔX^2 (12) = 131.78, $p < .001$). These results demonstrate that there is metric and scalar, but not configural, variance between ethnicity. The results for this CFA are presented in Table 6.3. Variation in factor loadings, alongside correlations are likely to only explain why measurement invariance was not wholly met, and suggests ethnic variation in the ways GAH and GAL is expressed within the HPI and MVPI, albeit limited due to missing data. This is discussed below.

Table 6.3 *The Results of Fitted CFA Model Across Ethnicity.*

		White	Other
Latent Variables	Observed Variables	*β*	*β*
GAH	Recognition	.85	.86
	Power	.58	.48
	Hedonism	.56	.37
	Sociability	.58	.50
	Adjustment	-.26	-.24
GAL	Sociability	.50	.49
	Adjustment	.84	.87
	Ambition	.62	.59
	Interpersonal Sensitivity	.54	.60
Correlations:	Power ~ Ambition	.35	.31
	Hedonism ~ Ambition	-.30	-.22
	Hedonism ~ Adjustment	-.29	-.32
	Sociability ~ Adjustment	-.63	-.20*
	GAH ~ GAL	.06*	.13*

Note: All relationships were statistically significant ($p < .001$; two tailed). Non-significant findings are marked *.

With ethnicity, Recognition and Adjustment loaded equally onto GAH for both White and Other. Power loaded onto White (*β* .58) and Other (*β* .48), and Sociability loaded onto White (*β* .58) and Other (*β* .50). The biggest difference in GAH was Hedonism which loaded onto White (*β* .56) and Other (*β*. 37). This suggests that, coupled with Power and Sociability, Hedonism reflects expectations in the White population, who are more individualist in their career goals, rather than collective as in non-white cohorts (Wink, 1997). It is certainly an area to consider for future research in how different ethnic groups get ahead at work. Sociability, Adjustment and Ambition are loaded equally onto GAL for both White and Other, and the biggest difference is Interpersonal Sensitivity which loads onto Other (*β .60)* and White *(β .54*), indicating that Other ethnic groups show more interpersonal sensitivity and consideration than White groups. There is no significant correlation between GAH and GAL for Whites, or Others in the ethnicity analyses, nor for men in the gender analyses.

6.6.4 Performance Ratings

Despite having a large sample when testing the latent factor structure, there were only 185 participants who had a complete set of supervisor ratings. This is because performance data was collected from just one of HAS's clients (situated in the construction industry). Missing data was not imputed as Little and Rubin's test (2002) suggested that the data was not missing completely at random, therefore it would have not been appropriate to impute missing values. To account for differences in measurement, the scores were standardised. Age and sex were included, however, because previous research, (Sheppard, Han, Colarelli, & Dai, 2006) has found differences in performances, and this allowed for control over such effects, and which are discussed further below.

A factor analysis was carried out on the 19 performance measures, and identified two factors of performance — Technical Performance and Social Performance. Supervisor ratings were subjected to a factor analysis in order to increase parsimony in forthcoming SEM where they featured as criterion variables for the previously identified latent factors of GAH and GAL. Table 6.4 displays bivariate correlations between these variables, with Table 6.5 displaying the results of a MLE factor analysis with Varimax rotation. Two factors were identified that account for 55% of the variance, with two composite scores computed as a result. These two variables were normally distributed. See Table 6.6 for bivariate correlations between performance and the HPI and the MVPI. Given the statistically significant relationships between both performance variables and personality traits, structural equation modelling was justified.

Table 6.4 *Bivariate correlations & descriptive statistics between supervisor ratings z-scores of Performance Indicators*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	M	SD
1. AO	-																		.00	.98
2. AL	.42**	-																	.02	.96
3. BR	.42**	.39**	-																.10	.93
4. Caring	.20**	.36**	.31**	-															.06	.97
5. Citizenship	.32**	.56**	.47**	.47**	-														.04	.96
6. Flexibility	.43**	.53**	.41**	.18*	.45**	-													.05	.94
7. IK	.47**	.48**	.43**	.10	.33**	.49**	-												.11	.93
8. Influence	.62**	.63**	.54**	.39**	.47**	.57**	.56**	-											.08	.92
9. OC	.46**	.72**	.42**	.21**	.43**	.41**	.50**	.62**	-										.04	.95
10.Perseverance	.70**	.49**	.46**	.15*	.38**	.47**	.52**	.59**	.51**	-									.02	.97
11. Organizing	.62**	.49**	.31**	.24**	.32**	.43**	.45**	.53**	.48**	.62**	-								.04	.97
12. RM	.58**	.56**	.44**	.16*	.42**	.51**	.52**	.56**	.50**	.58**	.68**	-							.04	.97
13. Responsibility	.24**	.38**	.37**	.61**	.42**	.32**	.15*	.38**	.25**	.28**	.27**	.25**	-						.03	.99
14. Sales Ability	.59**	.60**	.54**	.32**	.44**	.51**	.55**	.84**	.57**	.55**	.48**	.52**	.38**	-					.06	.96
15. SO	.21**	.45**	.38**	.55**	.43**	.34**	.31**	.49**	.38**	.26**	.27**	.29**	.53**	.37**	-				.08	.91
16. ST	-.46**	-.45**	-.38**	-.27**	-.47**	-.44**	-.32**	-.52**	-.39**	-.49**	-.39**	-.47**	-.41**	-.58**	-.43**	-			.00	.98
17. Teamwork	.37**	.56**	.46**	.47**	.73**	.37**	.27**	.57**	.44**	.39**	.36**	.42**	.44**	.46**	.42**	-.43**	-		.03	.98
18. TM	.62**	.53**	.38**	.25**	.50**	.57**	.48**	.58**	.45**	.63**	.81**	.81**	.27**	.55**	.26**	-.50**	.38**	-	.04	.96
19. IS	.28**	.59**	.38**	.65**	.61**	.38**	.22**	.50**	.37**	.29**	.31**	.31**	.54**	.50**	.55**	-.43**	.65**	.33**	.08	.97

Note: AO = Achievement Orientation; AL = Active Listening BR = Building Relationships; IK = Industry Knowledge; OC = Oral Communication; RM = Resource Management; SO = Service Orientation; ST = Stress Tolerance; TM = Time Management; IS = Interpersonal Sensitivity. * correlation is significant at $p < .05$ level; ** correlation is significant at $p <. 01$ level. N = 185.

Table 6.5 *Results from a MLE factor analysis (specified for two factors with Varimax rotation) suggesting two performance factors*

	Component		Communalities	
	1	2	Initial	Extracted
Time Management	.83		.84	.73
Resource Management	.81		.73	.68
Planning Organizing	.78		.71	.62
Perseverance	.75		.61	.59
Achievement Orientation	.73		.61	.57
Influence	.66	.49	.78	.68
Industry Knowledge	.63		.49	.42
Sales Ability	.59	.41	.67	.52
Flexibility	.58		.51	.44
Oral Communication	.58		.62	.46
Active Listening	.55	.54	.71	.60
Stress Tolerance	-.49	-.41	.48	.41
Building Relationships	.44	.41	.44	.36
Interpersonal Sensitivity		.82	.67	.72
Caring		.73	.61	.54
Teamwork		.69	.68	.58
Citizenship		.65	.69	.55
Service Orientation		.64	.52	.45
Responsibility		.64	.50	.43

Goodness of Fit Test	Chi-Square	*df*	Sig
	463.97	132	<.001

Rotation sums of squared loadings

Component	Eigenvalue	% of variance	Cumulative %
1	5.97	31.42	31.42
2	4.38	23.06	54.48

Note: Loadings >.4

Table 6.6 *Bivariate correlations & descriptive statistics between demographics, HPI & MVPI & performance*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	2
1. Age	-																				
2. Gender	.01	-																			
3. Adj	.05	.01	-																		
4. Amb	-.02	-.02	**.48****	-																	
5. Soc	-.29**	-.02	.10	.27**	-																
6. IS	-.02	.09	**.57****	**.45****	**.37****	-															
7. Prud	.09	.13	**.50****	.22**	-.12	**.40****	-														
8. Inquis	-.13	-.22**	.16*	.24**	**.34****	**.38****	.04	-													
9. Learn A.	-.01	.08	.17*	.30**	.17*	.14	.10	.28**	-												
10. Aesth	.13	.02	.09	.07	.27**	.23**	-.06	**.42****	.26**	-											
11. Affiliat	-.17*	.09	.29**	**.35****	**.59****	**.66****	.18*	.24**	.18*	.23**	-										
12. Altruis	.02	-.06	.21**	.24**	.19**	**.46****	.23**	**.33****	.25**	.32**	.41**	-									
13. Comm	-.25**	-.11	-.05	.09	.27**	.05	.06	.25**	.22**	.00	.23**	.11	-								
14. Hedon	**-.40****	.09	-.14	-.10	.33**	.03	-.24**	.05	-.07	.14	.28**	.01	.10	-							
15. Power	-.24**	-.16*	.05	**.31****	**.41****	.10	-.08	.23**	.20**	.04	.27**	.05	.46**	.23**	-						
16. Recogn	-.17*	.01	-.13	.10	**.60****	.10	-.12	.24**	.07	.11	.30**	-.01	.30**	.39**	.38**	-					
17. Scient	.00	-.19*	.04	.03	.04	.07	.02	**.60****	.25**	.26**	.07	.15*	.27**	.13	.20**	.18*	-				
18. Secur	.08	.03	.00	-.14	-.32**	-.08	**.48****	-.14	.03	-.09	-.11	.16*	.20**	-.12	-.03	-.09	.17*	-			
19. Tradit	.22**	-.08	.08	.30**	.09	.25**	.11	.18*	.13	.15*	.12	.45**	.03	-.19**	.12	.03	.08	.10	-		
20. TP	-.24**	-.05	-.20**	-.08	.06	-.15*	-.18*	-.02	-.18*	-.07	-.06	-.10	.08	.13	.05	.11	-.08	-.10	-.09	-	
21. SP	-.14	-.03	.11	.12	.08	.11	-.02	-.09	-.15*	-.02	.04	.04	-.05	.13	.08	.13	-.10	-.03	.12	.07	
M	41.82	1.13	27.59	24.86	14.15	19.42	20.5	14.93	9.21	33.28	49.95	48.72	49.33	39.34	50.41	42.25	38.86	40.51	50.25	0	0
SD	8.43	0.34	6.26	3.5	4.24	2.53	4.24	4.11	3.01	7.11	5.25	7.05	4.91	7.09	5.21	7.05	7.17	7.29	5.71	0.95	0.93

Note: Adj = Adjustment; Amb = Ambition; Soc = Sociability; IS = Interpersonal Sensitivity; Prud = Prudence; Inquis = Inquisitive; Learn A = Learning Approach; |Aesth = Asethetic; Affiliat = Affiliation; Altruis = Altruistic; Comm = Commercial; Hedon = Hedonistic; Recogn = Recognition; Scient = Scientific; Secur = Security; Tradit = Tradition; TP = Technical Performance; SP = Social Performance.
* correlation is significant at $p < .05$ level; ** correlation is significant at $p <. 001$.

6.6.5 Structural Equation Modelling

Structural equation modelling (SEM) is a statistical modelling technique used to establish relationships between variables. It is a comprehensive statistical approach for testing hypotheses about relations among observed and latent variables (Hoyle, 1995). Latent variables are variables that are not directly observed, but are inferred from other variables that are observed. In this study, the latent variables are the two super-factors of GAH and GAL that are inferred from the scales of HPI and MVPI. SEM is a methodology for representing, estimating, and testing a theoretical network of (mostly) linear relations between variables (Rigdon, 1998). SEM seeks to understand the patterns of correlation/covariance among a set of variables and to explain as much of their variance as possible within the model specified (Kline, 1998). It is used as a confirmatory technique for testing conceptual models, and thus it is a method of testing whether the theory fits the model derived from the first empirical study in Chapter 5. Both the CFA and SEM are outlined below. Like any other method, there are statistical limitations and drawbacks to this approach, particularly replication and cross-sample generalizability.

To confirm the factors derived from the CFA above, analysis is required which will show which factors are most influential in predicting the higher order factors of GAH and GAL. Whereas EFA is a bottom-up analysis that explores statistical clusters rather than theoretical variables, a CFA seeks to investigate from a top-down method, investigating factor analyses that are theoretically driven. In this thesis, the factors are GAH and GAL, theoretically derived from the research and the EFA. The process for conducting SEM allows for an adjustment of fit, around a hypothesised model, until the best-fit is achieved, in line with theory.

6.6.5.1 The saturated SEM model

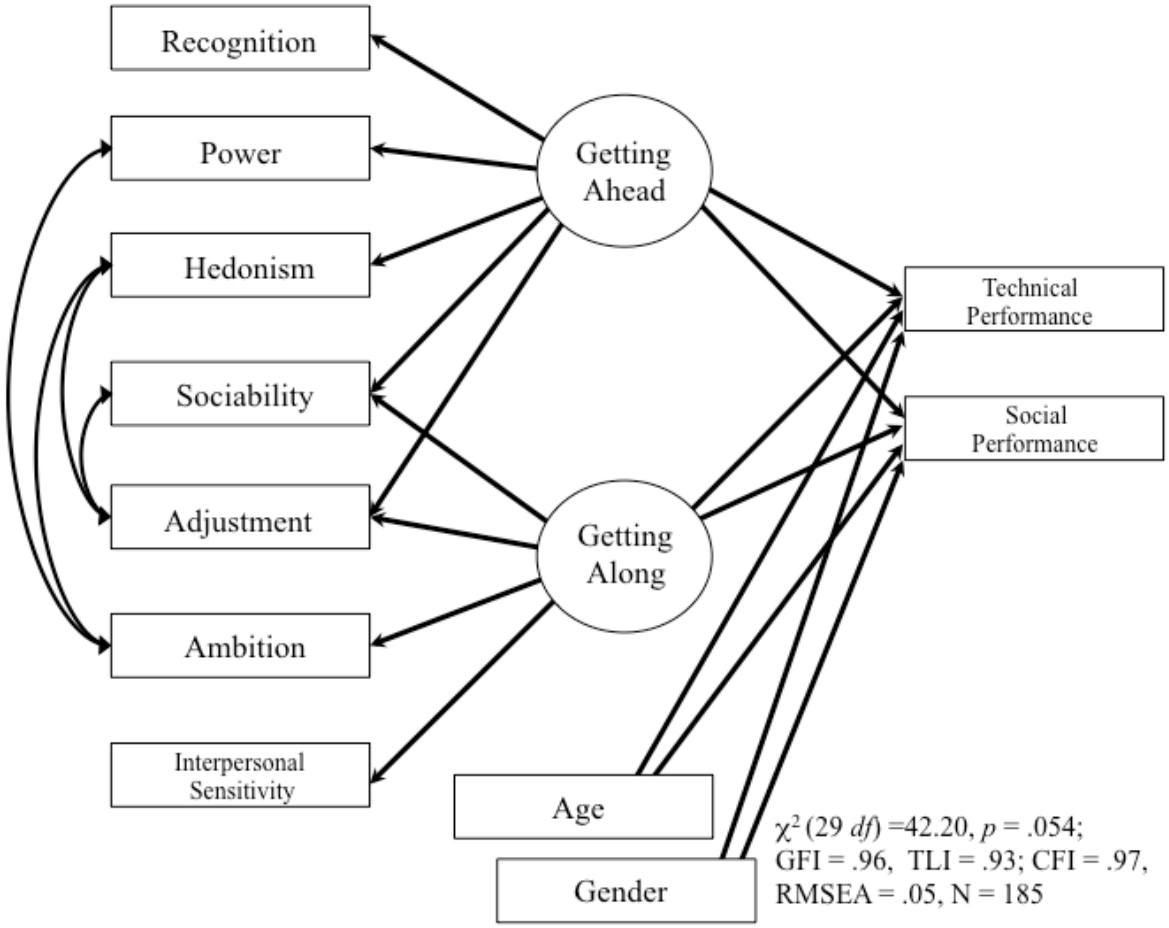
With the factor structure confirmed, and measures of work performance created, SEM was carried out using AMOS 5.0 software to determine the predictive validity of the latent GAH and GAL factors on Technical and Social performance. Age and Gender were also included in the model to control for their effects on job performance, they were also free to co-vary with the latent personality traits. The model fit was assessed

using the same fit indices used when conducting the CFA: $\chi 2$, GFI, TLI, CFI and RMSEA. The saturated model is displayed in Figure 3. Although this model was found to fit the data ($\chi 2$ (29 *df*) = 42.20, $p < .054$; GFI = .96, TLI = .93, CFI = .97, RMSEA = .05), steps were taken to increase the model's fit and parsimony using the same techniques used in the previously mentioned CFA (see Figure 6.3).

6.6.5.2. The fitted SEM model

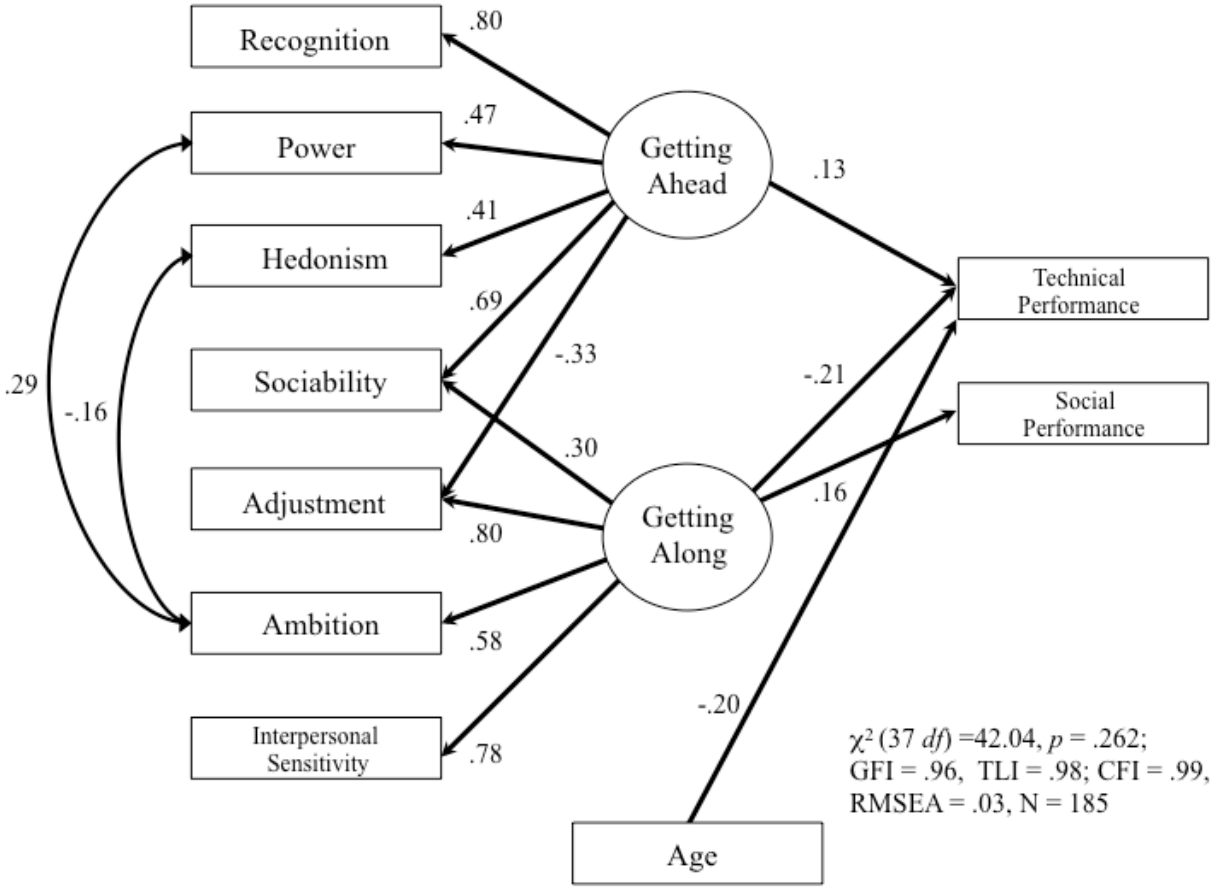
Regression paths from gender to performance were removed to improve model fit, as was the path from GAH to Social Performance. Additionally, the correlations between Adjustment and Sociability, and Adjustment and Hedonism were also removed. This improved the model fit ($\chi 2$ (37 *df*) = 42.04, $p < .262$; GFI = .96, TLI = .98, CFI = .99, RMSEA = .03). This model accounted for 3% of the variance in Social Performance and 9% in Technical Performance. Furthermore GAL negatively predicts Technical Performance (β = -.21, p = .011), and positively predicts Social Performance (β = .16, p = .054). Age was found to be a predictor of Technical Performance (β = .20, p = .004), compared to GAH (β = .13, p = .105); the non-significant regression path remained in the model as it improved model fit. The implications of this will be discussed later. The fitted model is displayed in Figure 6.4. Note that while the purpose of this analysis was exploratory rather than confirmatory, CFA is often used for exploratory purposes, though over-fitted and saturated models may be overused to reverse validate a theory.

Figure 6.3 *The saturated SEM model*



Note: for simplicity, correlational paths between exogenous variables are not shown.

Figure 6.4 *The fitted SEM model.*



Note: for simplicity, correlational paths between exogenous variables are not shown. These are: GAH & GAL: $r = .21$, $p = .057$; Age & Hedonism: $r = -.30$, $p < .001$; Gender & Power: $r = -.17$, $p = .024$. All other paths are significant at $p < .05$, except between GAH & Tech Performance ($p = .101$).

6.7 Discussion

This study sought to confirm whether two higher order factors: GAH and GAL, would be found within two psychometric measures, the HPI and the MVPI, and to what extent they could predict job performance, measured by supervisor ratings. This study confirmed and extended the previous chapters' findings. The results and limitations are discussed now.

Hypothesis 1: The scales of Recognition, Power, Sociability, Commerce and Hedonism will load onto GAH.

H1 was partially supported. GAH was shown to include the variables of Recognition, Power, Hedonism and Sociability. Commerce did not load onto this factor. Commerce relates to business activities, including opportunities for financial investment and planning. One explanation for this null finding may be because the main scale in GAH is Recognition, rather than doing well in business per se. Given that GAH requires a need to achieve superiority and status, commercial activities may be less important in this case than achieving recognition and power with which to do so. Sociability loaded onto GAH with a pathway of .69. This indicates that if people want to get ahead, they need to be in a social setting, networking and meeting new contacts. Sociability implies an open, engaging and appropriate public manner with others and those with GAH demonstrate this.

Although Adjustment was not hypothesised to load onto GAH in this study, previous research argued for it as a factor in getting ahead at work. The negative loading of Adjustment on GAH contradicts earlier research which argues that Adjustment would be a core characteristic of those who want to get ahead of others, as well as get along (Hogan & Holland, 2003). Good emotional stability indicates how calm, even-tempered, moody or volatile someone is (Hogan & Holland, 2003). Adjustment is considered to have significant impact both on the way people get on with others at work and how well they work towards career success in getting ahead (Barrick & Mount, 2005). One study, for example, found that those higher in extraversion, agreeableness and emotional stability generally received higher supervisor ratings both in terms of

task and social performance (Barrick, Stewart, Neubert, & Mount, 1998). This analysis found that Adjustment loaded negatively onto GAH, implying that to get ahead, it is detrimental to be too well adjusted. Indeed, as stated earlier, it may be inimical to "getting along" (Hogan 1982), that is, that *getting along* with others would be an impediment to someone wanting to *get ahead* (Anderson et al., 2001). The most prominent scale in GAH is Recognition, which is concerned with how far other people acknowledge us and accord us status. Recognition confirms that we matter to the group in which we live and work, and determines our place in any group, whether it is the family, a social group or an organisation (Winnicott, 1964). Thus, recognition gives status and rank and, according to ST, ensures security for those who get ahead.

Hypothesis 2: The scales of Adjustment, Ambition, Interpersonal Sensitivity, Prudence and Affiliation will load onto GAL.

H2 was partially supported. GAL was shown to include the variables of Adjustment, Ambition, Sociability and Interpersonal Sensitivity. It did not, however, include Prudence or Affiliation. These results are interesting in that Prudence is seen as including facets of Conscientiousness such as self-control and the ability to be reliable, organised and punctual (Hogan & Holland, 2003). In the first empirical chapter (Chapter 5), Prudence showed significant positive correlations with Adjustment and Interpersonal Sensitivity indicative of someone who is considerate of, and sensitive to, other people and their needs. These are qualities needed in order to get along with others, and would have been expected to load onto the GAL factor here. The bivariate correlations initially found a correlation of .45 with Prudence and Adjustment, but later analyses found that Prudence did not load onto GAL. It is argued that in the SEM analysis (Fig 6.4), Prudence is incorporated into Interpersonal Sensitivity and thus GAL encompasses the sensitivity and consideration that would otherwise be seen in Conscientiousness. Affiliation did not load onto GAL either, in contradiction to the hypothesis. Affiliation is associated with frequent and varied social contact as well as a need to feel part of a group and work as a team with others. Earlier analyses found that Affiliation correlated with Sociability and Interpersonal Sensitivity and it is argued that this scale has been incorporated into IS through the SEM analysis (Fig 6.4). Ambition, originally argued to load onto GAH, loaded on to GAL. The Ambition scale

on the HPI evaluates the degree to which a person seems leader-like, seeks status, and values achievement, all of which resonate with GAH. Ambition, however, is a component of Extraversion on the HPI (Hogan & Holland, 2003) and this might explain its inclusion in the GAL factor. People who get along with others tend to engage easily with them, are open, warm and responsive, qualities generally indicative of extravert behaviour. Extraverts tend to make friends more easily than Introverts, for example, as they socialise, network, engage and converse more readily than do Introverts. The results here may be as indicative of extraverted individuals as much as of those who are ambitious. The results indicate that Ambition is a core component for GAL. It is unclear at this stage whether Ambition drives the need to get along with others, or getting along with others is a means to an end by which to achieve one's ambition. The results show a distinct higher order factor of GAL, which includes Adjustment, Ambition and Interpersonal Sensitivity, with some changes in the strengths of association from the first CFA: Adjustment and Ambition were less highly correlated with GAL, though still strongly associated with it, and Interpersonal Sensitivity much higher in the final analysis in this second study.

Hypothesis 3: GAH and GAL will correlate with workplace performance measured by supervisor ratings.

H3 was partially supported. The 19 supervisor ratings were reduced to two factors relating to technical performance (TP) and social performance (SP). The results in this study suggest that the two higher order factors GAH and GAL seem to predict some areas of general performance. Therefore, using them offers some, albeit limited so far, practical utility. GAL showed a low but positive correlation with SP, and negative correlation with TP. GAH showed no relationship to SP, a low correlation with TP. Overall, the measures used are indicative of performance, but are not robust or rigorous enough to support H3, nor were they sufficient, given the missing data. This may be a criticism of the variables themselves. For instance, the ones used in this study were highly varied and not all transfer to performance measures. This is a major criticism of the performance indicators used here, and the dataset generally. Further, several organisations were used in this study, representing the hospitality, construction and haulage industries, whereas the same performance outcomes were applied across them all. An example is the performance criteria of *Industry Knowledge, which* might

demonstrate that someone knows how their organisation runs and has expert knowledge in their specialism, but it does not necessarily mean they will perform well. The performance criteria, *Influence,* is also questionable as a reliable measure in that the sphere of influence for anyone is limited by their role, their manager or the organisational policies, as well as by their individual personality differences. *Influence* would be more credible as an outcome it there were measurable criteria against which to judge the performance.

It is not surprising H2 was partially supported given how poor supervisor ratings on their own are as objective criteria for measuring performance. Cook (2009) found a correlation between supervisor ratings and objective criteria of .40 but argued that the supervisor's rating and the performance criteria are often measuring different things. Supervisors generally rate employees they like more highly than others, and there is a tendency towards generosity of assessment ratings at such times, invalidating the data (Cook, 2009, p.241). Nevertheless, supervisor ratings are the most commonly used form of performance assessment at work, and in this current study, the only form of observer ratings collected. This explains why the main criticism of using such data is in its limitation as an objective measurement. Given the limitations of supervisor ratings, other sources of rating performance are required and for the third empirical study other measures are applied. The limitations of the study are discussed now.

6.8 Limitations of the study

6.8.1 Measurement Bias

Previous research has argued that test bias in personality measures is not as fully explored as in cognitive measures, historically due to the weight that cognitive tests have had on career and educational selection decisions (Sackett & Wilk, 1994; Sheppard et al., 2006). Nevertheless, Sheppard et al. (2006) found some measurement bias in the HPI across both sex and ethnicity. This translates into different results where "individuals from different subgroups who possess the same quantity of an underlying (latent) trait have unequal probabilities of obtaining the same test score" (Sheppard et

al., 2005, p.443). Similar to this study, data was donated for the Sheppard et al. (2005) study from an automobile supplier whose employees completed the HPI.

A key criticism of the HPI by Sheppard et al. (2005) was of the language used which demonstrated potential bias, and favoured either male or female respondents at times. Bias towards males included the wording of "thrill-seeking, mountain climbing, scuba diving and scientific, mathematical skills and competitiveness". Bias towards females included the wording of "reading, life happiness and life satisfaction". Language bias with regard to ethnicity was found to be greatest on thrill seeking with Whites endorsing 20% more items than Blacks (Sheppard et al., 2005), and Blacks being biased towards a happy home life/parental relationships. Overall they found 38% of the items biased by sex, and 38% biased by race. It could be argued that some elements of bias were less towards race, than cultural differences, where Whites are more likely to engage in risky, and expensive, pursuits such as scuba diving and race-car driving than Blacks who are generally on a lower economic (Shepperd et al., 2005). Future research should consider the socio-economic levels of participants as much as the racial differences. Generally, the item differential bias was not as clear on ethnicity as it was on sex, which is easier to differentiate than racial differences (Cavalli-Sforza, 2000).

Sheppard et al. (2005) found that while other studies also found approximately a third of items which indicate potential item bias (MMPI and NEO-PI-R) others argue that item bias is not necessarily a problem, and "does not weaken measurement quality or the predictive validity of the overall test" (Sheppard et al., 2005, p.449). In this study on the HPI (Sheppard et al., 2005) concluded that while there is a degree of measurement bias, it was "relatively small" (p.451) but something to be aware of particularly of sex differences when using in assessment and selection. To remove any bias, as far as possible, MI tests will be conducted in future studies during scale development. At this point, the HPI and the MVPI are being investigated in order to gain a theoretical understanding of how they form higher order factors of GAH, GAL and FM, and any bias should be considered when developing a new measure for assessment. A request for item level responses was made to HAS who had agreed at the beginning of this project that access for these would be given for this study. On examination of the datasets, however, it was found that the item level responses were

not consistent or reliable enough to use for this analysis and HAS decided not to release item level responses for the research.

Additionally, the two psychometric measures used: HPI and the MVPI, were not shown adequately to reflect the GAH and GAL higher order factors in a way which reflects the underpinning theory. ST argues that those with ambition will strive to get ahead, and seek power and status, relating to GAH. It also argues that consideration for others, the ability to put others before oneself (Altruistic) and a need to mix well socially would be related to GAL. The results in this study show this is not necessarily the case (see Table 6.7 and Table 6.8 below).

Table 6.7 *CFA Fitted two factor solution representing GAH and GAL higher order factors*

GAH	GAL
Recognition (.87)	Adjustment (.86)
Power (.57)	Ambition (.64)
Sociability (.52)	Interpersonal Sensitivity (.53)
Hedonism (.46)	Sociability (.52)

Table 6.8 *The fitted SEM model representing GAH and GAL higher order factors*

GAH	GAL
Recognition (.80)	Adjustment (.80)
Sociability (.69)	Interpersonal Sensitivity (.78)
Power (.47)	Ambition (.58)
Hedonism (.41)	Sociability (.30)

The weightings of each scale are slightly different due to using different models, but the results of both analyses confirm the distinct higher order factors of GAH and GAL for a new measure (Table 6.9):

Table 6.9 *New measure GAH and GAL*

GAH	GAL
Recognition	Adjustment
Power	Ambition
Sociability	Interpersonal Sensitivity
Hedonism	Sociability

It seems that while the two Hogan measures offer a comprehensive and inclusive measure of personality in terms of reputation and identity, neither of the measures relate specifically to the ST of GAH and GAL. The HPI is based on predictive behaviour by observer ratings, and is not demonstrating, per se, what the observers see, and as observed "the most fundamental and most difficult problem in any selection research program is to obtain satisfactory criterion measures of performance, on the job, against which to validate selection measures" (Thorndike, 1949, p.119).

6.8.2 Performance criteria assessed by supervisors

A further limitation is that of the observer ratings (supervisor performance appraisal). A consideration of the 19 performance criteria shows a discrepancy between the underlying theory and the expected behaviours against which individuals were assessed. Based on the underpinning ST, it would be expected that Building Relationships, and Active Listening, two key skills in working well with people, would be higher in SP than TP. This is not the case in these results. Stress tolerance is a component of emotional stability and would be expected to load onto SP but it shows a negative correlation with SP. Overall the performance criteria analysed in this second study are not seen as rigorous enough, nor pertinent to, a relationship with either GAH or GAL. Additionally, not only were the performance criteria too diverse in measurement, only 185 participants completed both the psychometric measures as well as performance data which essentially invalids the findings. It offers little insight into how far performance is matched against personality and this is addressed in the next study where performance item statements are designed, and developed, to assess specifically for GAH and GAL (Chapter 7).

The advantages and disadvantages of both observer and self-ratings was discussed in Chapter 3. While it has been argued that supervisor ratings have poor reliability due to the variables of different tasks being measures (Cook, 2009), they are seen to offer some face validity in that they attempt to measure what they set out to measure, that is, how someone performs at work (Borman, 1978). Ratings between the individual and their peers only show a modest correlation: those between peers and supervisors of an individual showed relatively high correlations (p =.62) suggesting that others have a clearer view of how we perform than we do ourselves (Harris & Schaubroeck, 1988; Connelly & Ones, 2010; Connelly & Hülsheger, 2012). Cook (2009) argues that although supervisor ratings are not the most reliable, they are the most commonly used method for appraising performance, and they have validity in that they are one person's perception of another at work, albeit possibly a somewhat flawed perception. It is not, therefore, unreasonable to use data from such sources as a means to assess individual performance at work (Cook, 2009). Nevertheless, supervisor ratings can be a potential impediment to relevant performance assessment, particularly where the performance is not observed, and where supervisors often need to manage absent teams (Chamorro-Premuzic, March 24, 2012). For this reason, self-ratings are argued to be a viable alternative, which can assess performance unseen by supervisors, and are considered below for the empirical studies.

Research shows that while observer ratings may offer a more accurate reflection of performance than self-reports when aligned to clear performance criteria (Smither & London, 2009; Oh et al., 2011; Shyamsunder & Barney, 2012), it is better to have multiple raters than just one person alone. Supervisor ratings are prone to bias (Cook, 2009), particularly so when the supervisor likes or dislikes the person they are assessing. Supervisors are more likely to rate performance positively when an employee is helpful and agreeable to work with, rather than that their performance meets certain criteria (Chamorro-Premuzic, 2012). The limitations of using just one assessor for performance, as a measure against which to assess how far GAL and GAH relate to workplace performance, is clear from this study, which returned so few supervisor ratings. There is a need for more specific criteria, either with a rigorous self-assessment of performance, matched to clear criteria, or assessment with multiple raters assessing each individual. The lack of data from supervisor ratings limits the conclusions that

can be made about the data to some extent. This is something that will be considered further for the third empirical study.

6.8.3 Archival data

Another limitation of this study, was that the archival data allowed for no control over the design of performance criteria against which individuals were assessed. This data set was used for preliminary research purposes to assess for higher order factors, but future research would ensure that all variables were controlled for, and as with data collected in the following chapters, compel participants to complete each section before proceeding with questionnaires, ensuring no missing data. The question of sampling for all studies will be discussed in Chapter 10.

Despite the limitations of this study, there are clear indicators for taking this research further. While the HPI and the MVPI offer many advantages in selecting for individual differences, they are lengthy, expensive and time consuming. The HPI has 206 items, and the MVPI has 200 items. Moreover, it is questioned whether they actually assess GAH and GAL, despite the underlying ST arguing for these two drivers as being key to workplace performance. A new measure, in tandem with a relevant method of capturing performance data, would be of use for future assessment of workplace behaviour. These results show that while GAH and GAL are useful indicators of behaviours and have some, albeit limited, utility in predicting performance, the measures themselves may be too elaborate, or attempting to measure too many variables, not all of which are applicable to performance. Notwithstanding the limitations of studies in Chapter 5 and 6, the results do support further investigation though a third empirical study, which is described in Chapter 7.

Chapter 7: Study 3 – New Measure Development

7.1 Introduction: Rationale for measure development

The existence of two distinct higher order factors of GAH and GAL is supported by the data presented in the previous chapters, although a way of measuring them directly has, as yet, to be designed. In line, this chapter deals explicitly with the design of a new measure for GAH and GAL. ST argues that people strive to get ahead, and get along, and this research investigates which scales of the HPI and the MVPI relate to GAH or GAL at work. The investigation has found that fewer scales on the two Hogan measures have resulted in a shorter measure which includes both personality and values.

The rationale behind the development of this new short measure is to provide an abbreviated, more direct measure of the two master motives underlying the two core Hogan inventories: the HPI focuses on personality traits, and the MVPI focuses on motives, values and preferences, both of which are indicative of work performance (Hogan & Hogan, 1997). A short measure for GAH and GAL will, therefore, offer a combination of these, so that the personality factors and the motives and values of an individual can be measured in a more integrated and efficient manner. Such a measure would inform selection and development by: a) indicating how far someone is predisposed to get ahead, or get along, and; b) how this will manifest at work through performance.

A measure of predictive outcomes of performance aligned to either GAH or GAL has not been attempted before and has significant implications for selection, assessment and development. This research study will offer a new and distinctive measure for this. Furthermore, not only will this new measure serve as a useful adjunct to current selection and development processes, but it will be helpful for future research studies in ST.

A precedent for minimising factors has been set by earlier researchers who sought to find higher order factors within widely recognised personality measures, such as the Big Five and to reduce the factors to fewer 'super-factors' (Cattell, 1973; Costa and McCrae, 1992a; Eysenck, 1992; Hogan & Hogan, 1997; Digman, 1997; DeYoung, 2006; DeYoung, Peterson, & Higgins, 2002), or even to one general factor of personality, referred to the GFP (Musek 2007; Rushton et al., 2008; Rushton & Irwing, 2011). Research includes that of Digman (1997) who found two higher order factors of *alpha* and *beta* in personality (Digman, 1997) with *alpha* relating to emotional stability, agreeableness and conscientiousness, and *beta* to extraversion and openness; and that of Rushton et al. (2011), who argued for a general super-factor of personality (Rushton et al., 2008; Rushton & Irwing, 2011). This chapter builds on the underlying premise of these studies, by investigating the higher order factors of GAH and GAL within two existing measures; the HPI and the MVPI and to investigate which scales of the HPI and the MVPI comprise either GAH or GAL.

7.2 Item Selection and Development

The development of the new measure followed the standard process of psychometric development (see Fig 7.1, Hinkin, 1998). The first phase involved the creation of the items, which included a content analysis by experienced raters in the field of psychometric assessment. The second phase involved using data reduction techniques to identify and validate the measure's factor structure, alongside measuring its internal consistency. These two phases will be described in this chapter, with the concurrent and convergent validity being tested in the next chapter. Hinkin (1998) argued that development of a robust psychometric measure, founded on theory, requires a step-by-step approach to ensure that all stages of test construction are met, including: item generation, administration, item reduction, statistical analysis, and replication for a valid and reliable psychometric measure (below Figure 7.1). Given this, the current study adopted a deductive approach, which aims to test the hypotheses based on the theory discussed in previous chapters.

The first stage of development of the new measure involved creating items to measure the scales of the new questionnaire. Item scales should demonstrate construct validity, that is, how far the scale measures that which it seeks to measure (Searle, 2009), and should also demonstrate that they link theory to the psychometric measurement (Kerlinger, 1986). The HPI and MVPI are based on sound theoretical underpinning and considered robust measures (Lobello, 1998; Hogan & Holland, 2003; Creed & Shackleton, 2007; Goldberg, 2008; Marshall & Lindley, 2009; Feltham & Loan-Clarke, 2007), and therefore relevant when selecting item statements for this new measure. In line with Hinkin's model of item development (1998), the method selected for this study was deductive, being based on a theoretical foundation which provides "enough information to generate a set of items" (Hinkin, 1998, p.106), which also adequately represents the construct being measured. Hinkin's Scale Development Process (1988) is outlined in Figure 7.1.

Figure 7.1 *Hinkin's Scale Development Process (1998)*

Step 1: Item Generation

⇓

Step 2: Questionnaire Administration

⇓

Step 3: Initial Item Reduction

⇓

Step 4: Confirmatory Factor Analysis

⇓

Step 5: Convergent/Discriminant Validity

⇓

Step 6: Replication

⇓

⇒ (go back to steps 4 and 5 when necessary)

Hinkin (1998)

The personality items developed for the questionnaire in this study, to measure GAH and GAL, were based on two sources: item statements in the HPI, and modified for this

study (with permission from HAS), as well as on the literature in the preceding chapters which indicated how people would be seen by others at work in relation to GAH and GAL, resulting in 76 personality item statements generated (see Appendix 7.1). To ensure content and face validity, and to further reduce the item count by removing redundant or irrelevant items, four volunteers who specialised in the field of psychometric measurement were asked to assess the personality statements. The volunteers include two Professors of Psychology, one Principal Lecturer in Psychometrics and one senior HR practitioner of selection and assessment, who reviewed the items and made recommendations regarding the exclusion, or inclusion of certain items. Volunteers were asked to rate the items according to how far they agreed a statement reflected GAH or GAL, on a 5 point Likert scale where 1 = low agreement, and 5 = high agreement Ratings of 4 and 5 were included, and anything less than 4 was discarded. Five statements were discarded from the personality statements for GAL, reducing the total number of item statements to 71. The item statements removed were 19, 20, 22, 24 and 33. Items modified following feedback were GAH: 14, 31, 37, 41 and GAL: 13, 16, 17, 27, 28. Items were reversed in the final questionnaire to avoid response bias ie "Money is not a key motivator for me" and "I tend not to take criticism too personally" (see Appendix 7.2).

7.3 Method

7.3.1 Participants

The study consisted of N = 310 adult workers [Females = 137, 44.2%; Males = 173, 55.8%]. Ages were 18 to 74 years (18-24 yrs, 11.0%; 25-34 years, 45.2%; 35-44 years, 26.5%; 45-54 years, 12.3%; 55-64 years, 4.5%; 65-74 years .6%). The marital status of participants was: Single 110 (35.5%); Married 149 (48.1%); Divorced 11 (3.5%) Widowed 4 (1.3%); Living with a partner 36 (11.6%). Ethnicity of participants was: White 29 (9.4%) White Other 180 (58.1%); Black/Caribbean 21 (6.8%); Black British 1 (.3%); Asian British 5 (1.6%); Asian/Indian Pakistani 58 (18.7%); Chinese/Japanese/Korean 5 (1.5%); South American 2 (.6%); Other 9 (2.9%). Occupations included: Manual worker 29 (9.4%); Semi-skilled 42 (13.5%); Skilled 127

(41.0%); Supervisory 46, (14.8%); Managerial 55 (17.7%); Senior Management 9 (2.9%); and CEO 2 (.6%). Educational levels were: Secondary school 43 (13.9%); Further Education, 50 (16.1%); University under-graduates 124 (40.0%); University post-graduates 54 (17.4%); MBA 27 (8.7%); MPhil/PhD 8 (2.6%); and Professional (LLM, CPsychol/CIPD) 4 (1.3%). The annual income of the participants was: <£10,000, 43 (13.9%); £10-25,000, 74 (23.9%); £25-40,000, 85 (27.4%); £40-50,000, 53 (17.1%); £50-65,000 27 (8.7%); £65-80,000, 15 (4.8%); >£80,000, 13 (4.2%).

7.3.2 Personality items for new GAH and GAL measure (Appendix 7.2)

7.3.3. Procedure

All items were hosted on an online survey site (Amazon Mechanical Turk) where participants were asked to read the Confidentiality and Ethics notice before proceeding. Participants needed to accept the terms and to give their consent knowingly in order to continue with the questionnaire. Participants were asked to think about their personality styles at work, and to respond to the questionnaire which used a 5 point Likert scale, where Low Agreement with the statement was 1, and High Agreement 5 (see Appendix 7.2 for personality items). In accordance with BPS ethical guidelines, and in addition to the consent page, a debrief page was added at the end of the questionnaire to explain the research study.

7.4 Results

7.4.1 Parallel Analysis

Parallel Analysis was conducted to determine "which variable loadings are significant for each component, and thus parsimoniously simplifying structure and reducing the analysis of noise" (Franklin, Gibson, Robertson, Pohlmann, & Fralish 1995, p.100). The data was first subjected to a parallel analysis to determine the number of factors to retain from an exploratory factor analysis through data simulation and permutation.

Parallel analysis seeks to address the subjectivity found when interpreting traditional Scree plots. In order to conduct the parallel analysis, the R 'paran' package (Dinno, 2012) was used. This package is an implementation of Horn's technique for numerically and graphically evaluating the factors retained in an exploratory factor analysis, with factors having adjusted eigenvalues greater than one are to be retained (Dinno, 2012). When specifying the parameters for the parallel analysis, it was decided to apply a Principal Axis Factoring method to the data as opposed to a Principal Components method given the exploratory nature of the hypotheses, as the goal was to investigate underlying latent factors, rather than simply reduce several variables down to as few dimensions as possible. Lastly, the data was specified to be iterated 5000 times, and the 95th percentile was used to estimate bias between the adjusted and unadjusted eigenvalues.

The parallel analysis (Table 7.1) found seven factors to have adjusted eigenvalues greater than one, however, factors one and two had adjusted eigenvalues that were greater than ten, and therefore considerably larger than then the other five factors. Accordingly, further investigation to explore only two factors — the hypothesized getting ahead and getting along dimensions — were carried out.

Table 7.1 *The Results of the Parallel Analysis.*

Factors	Adjusted Eigenvalue	Unadjusted Eigenvalue	Estimated Bias
1	43.09	45.84	2.75
2	12.58	15.20	2.62
3	3.93	6.47	2.54
4	2.92	5.39	2.47
5	2.36	4.76	2.40
6	1.67	4.02	2.34
7	1.07	3.36	2.29
8	.15	2.40	2.25
9	.05	2.25	2.20

7.4.2 Exploratory Factor Analysis

Given the large number of items for GAH and GAL, it was decided to reduce the item count and test for psychometric properties of each dimension in turn, rather than subjecting all items to an exploratory factor analysis. This method was chosen to retain statistical power considering the sample size. A correlation table was produced that contained all items that were hypothesised to belong to a dimension. Any two items that shared a coefficient less than .40 were discarded. The subsequent items were then subjected to Principal Axis Factoring (PAF) with an Oblimin rotated factor analysis procedure (see Table 7.2).

Furthermore, Kaiser-Meyer-Olkin's value was assessed with each factor analyses to ensure that the data was suitable for factor analyses (scores above .60 are recommended; Kaiser, 1970), alongside checking for low item communalities and discarding items that had loading coefficients of less than .40 or crossed-loaded (Hinkin, 1998; Williams, Onsman, Brown & Rasch, 2012). Items that loaded on a single dominant factor (i.e. accounting for at least 35% of the variance) were retained and tested for internal consistency as measured by Cronbach's alpha. The procedure resulted in the total number of items relating to GAH and GAL being reduced from 71 to 22. A summary of these analyses is presented in Table 7.3.

Table 7.2 shows that each factor analysis produced a dominant factor that accounted for all the variance explained by the analyses. Additionally, each scale had excellent levels of internal consistency (.70 is deemed satisfactory; Nunnally, 1978). With the number of possible items reduced 22, a further set of EFA was carried out to explore the item's combined factor structure. It was hypothesised that a clear two-factor solution would be found. Initially, this hypothesis was not supported: despite a scree plot suggesting a single dominant factor, the pattern matrix suggested there were two distinct higher order factors. Accordingly, a second EFA was chosen. In this model, all cross-loading items were removed. Although the scree plot indicated one factor, the pattern matrix revealed a distinct two-factor solution (Table 7.3).

Table 7.2 *The Summary of Initial Exploratory Factor Analyses*

			Extracted Sums of Squared Loadings				
Dimensions	KMO	Eigenvalue	Factor Variance Explained	Total Variance Explained	Initial Number of items	Reduced Number of Items	α
GAH	.92	4.87	37.44%	37.44%	28	13	.88
GAL	.85	2.92	32.44%	55.17%	17	9	.81

Table 7.3 *The Results of an Exploratory Factor Analysis*

Factor		Communalities		Items
1	2	Initial	Extraction	
.84		.51	.60	I take responsibility in groups
.58		.29	.30	I can be forceful when I want something done
.66		.45	.49	I usually offer to present group projects
.53		.37	.38	I stick my neck out to get ahead at work
.65		.37	.42	Work is more fun if there is an element of competition
.52		.39	.36	I like to be in control of events at work
.66		.45	.47	I prefer to manage my team than be managed
	.40	.23	.22	Taking the team out for a social event helps team morale
	.63	.27	.32	It is important to encourage individual talent at work
	.49	.38	.37	I am happy to adapt my working style to suit my manager
	.57	.36	.37	I try to calm things down whenever there is conflict
	.38	.33	.28	I gain personal satisfaction if people ask me for help
	.46	.33	.30	I can talk to anyone at work, regardless of their rank
	.76	.37	.50	I feel valued when others include me in their plans
Alpha	.84	.77		
KMO	.89			

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.16	36.855	36.855	4.566	32.611	32.611	4.119
2	1.41	10.068	46.924	0.82	5.856	38.467	3.584

In this EFA, the two factors have an equal number of items, with a clear distinction in item content. Although the items load strongly onto their respective factors, there are differences in the amount of variance accounted by each factor. For example, Factor 1 (GAH) accounted for 32.61% of the variance, while Factor 2 (GAL) accounted for only

5.86%. When taking this into account with the model's scree plot, the evidence for a GAL factor is limited. To further explore this, Confirmatory Factor Analysis was conducted.

7.4.3 Confirmatory Factor Analysis

Using the Lavaan R Package (Rosseel, 2012, assistance for this analysis from Dr. Reece Akthar, University of London), a latent model was specified based on the measurement model identified by the final EFA (Table 7.3). Accordingly, this model featured two latent factors (GAH and GAL) with 14 observed variables (seven of which were loaded onto their respective latent factor, see Table 7.4). The two latent factors were also free to correlate. The model's fit was assessed via a handful of indices: the $\chi 2$ statistic (Bollen, 1989; which tests the hypothesis that an unconstrained model fits the correlation matrix as well as the given model; $p > .05$ is desired); the goodness of fit index (GFI; Tanaka & Huba, 1985; values above .90 are acceptable); the comparative fit index (CFI; Bentler, 1990; values above .95 are acceptable); and the root mean square residual (RMSEA; Browne & Cudeck, 1993; values of .06 or below indicate reasonable fit for the model). As such, the model was found to fit the data ($\chi 2$ (76) = 162.92, $p < .001$; GFI = .93; CFI = .93; RMSEA = .06).C

As illustrated in Table 7.4 below, the items loaded strongly on to their respective factors, and accounted for an adequate amount of variance in each item. Most notable, however, is the large, positive correlation between the two latent factors (B = .27, $\beta = .70$, $p < .001$). In order to explore whether this correlation represents a single latent factor in the data, two further models were tested: one featured all 14 items loading on to a single latent factor, while the other featured two latent factors (GAL and GAH). Using the same fit indices as previously described, results supported retaining the two-factor solution.

Table 7.4 *The Results of CFA for GAH and GAL 14 item statements*

Latent Variable	Items	*B*	*β*	*SE*	% of Variance
GAH					
	I take responsibility in groups	1.00		.78	.56
	I can be forceful when I want something done	.74	.53	.08	.29
	I usually offer to present group projects	1.10	.71	.09	.50
	I stick my neck out to get ahead at work	.81	.62	.07	.39
	Work is more fun if there is an element of competition	.91	.64	.08	.41
	I like to be in control of events at work	.81	.61	.08	.37
	I prefer to manage my team than be managed	.99	.69	.08	.48
GAL					
	Taking the team out for a social event helps with team bonding	1.00		.48	.23
	It is important to encourage individual talent at work	.89	.52	.14	.27
	I am happy to adapt my working style to fit in with my manager	1.26	.62	.18	.39
	I try to calm things down whenever there is conflict between colleagues at work	1.25	.62	.18	.39
	I gain personal satisfaction if people ask me for help	1.09	.54	.16	.30
	I can talk to anyone at work, regardless of their rank	1.00	.54	.15	.30
	I feel valued when others include me in their plans	1.23	.64	.17	.42

Note: All coefficients are significant at the $p < .001$ level.

7.4.4 Additional Analysis & Scale Statistics

Given the above results, additional analyses were conducted to further explore the factor structure of the two dimensions. Specifically, the sample was randomly split in half with the first (N = 156) subjected to a PAF with an Oblimin rotation, while the other half (N = 154) was fitted to the CFA model that was outlined in Table 7.4. Such analyses were done to demonstrate the validity and robustness of the identified factor

structures and item loadings. The PAF revealed a two-factor solution that featured the same item loadings, with the GAH factor explaining 23% of the variance and the GAL factor explaining 16% of the variance. The CFA model was also found to fit the data ($\chi 2$ (76) = 118.40, $p < .001$; GFI = .90; CFI = .93; RMSEA = .06). These findings, demonstrate the robustness of the analyses outlined above.

Using the full sample and to summarise the development of these scales, Table 7.5 contains the descriptive statistics for the two scales, and Table 7.6 contains the descriptive statistics for the identified 14 items. In both tables, the full range of scores were observed and the scales and items were normally distributed. Lastly, the scales have good internal consistency, with all the items positively contributing to such consistency.

Table 7.5 *Descriptive Statistics for the Getting Ahead and Getting Along Scales.*

Dimension	Min	Max	*M*	*SD*	Skewness	Kurtosis	α
Getting Ahead	1	5	3.37	.78	-.27	-.08	.84
Getting Along	1	5	3.82	.61	-.44	.82	.77

Note: N = 310. GAH = Getting Ahead. GAL = Getting Along. Min = Minimum score; Max = Maximum score; *M* = Mean; *SD* = Standard Deviation; α = Cronbach's alpha

Table 7.6 *Descriptive Statistics for the Getting Ahead and Getting Along Items.*

Dimension	Item	Min	Max	*M*	*SD*	Skewness	Kurtosis	α
GAH	I take responsibility in groups	1	5	3.51	1.06	-.36	-.53	.80
	I can be forceful when I want something done	1	5	3.34	1.10	-.26	-.65	.83
	I usually offer to present group projects	1	5	3.09	1.23	-.18	-.96	.81
	I stick my neck out to get ahead at work	1	5	3.31	1.02	-.35	-.31	.82
	Work is more fun if there is an element of competition	1	5	3.32	1.11	-.29	-.6	.81
	I like to be in control of events at work	1	5	3.59	1.05	-.54	-.23	.82
	I prefer to manage my team than be managed	1	5	3.48	1.13	-.35	-.72	.81
GAL	Taking the team out for a social event helps with team bonding	1	5	3.61	1.02	-.53	-.25	.76
	It is important to encourage individual talent at work	1	5	3.97	.83	-.60	.27	.74
	I am happy to adapt my working style to fit in with my manager	1	5	3.57	.99	-.37	-.48	.73
	I try to calm things down whenever there is conflict between colleagues at work	1	5	3.75	.97	-.72	.21	.72
	I gain personal satisfaction if people ask me for help	1	5	3.79	.97	-.67	.21	.75
	I can talk to anyone at work, regardless of their rank	1	5	4.05	.90	-.90	.70	.75
	I feel valued when others include me in their plans	1	5	3.98	.93	-.83	.35	.72

Note: N = 310. GAH = Getting Ahead. GAL = Getting Along. Min = Minimum score; Max = Maximum score; *M* = Mean; *SD* = Standard Deviation; α = Cronbach's alpha of the scale if item is deleted.

7.4.5 Measurement Invariance

In order to explore whether the fitted CFA model suitably represents behaviour between genders and ethnicity, that is, is the model invariant between these groups, tests of measurement invariance were conducted. Following the recommendations outlined by Cheung and Rensvold (2002), three invariance tests were conducted: configural (groups associate the same subsets of observed variables with the same latent factors); metric (the strength of the relationships between items and their underlying constructs are the same for both groups); and scalar (the strength of the relationship between each item and its underlying construct is the same for both groups). These tests were conducted using the Lavaan R package (Rosseel, 2011) and the chi-square statistic (where significant results suggest variance between groups). Measurement was first tested between genders (males & females) and then between ethnicity (white & other).

7.4.5.1 Measurement Invariance: Gender

There were 173 males and 137 females in this study, (N:310, no missing cases). Using the previously identified CFA model, but fitting it between the males and females, configural invariance was found ($\chi 2$ (152) = 286.65, $p < .001$; GFI = .98; CFI = .90; RMSEA = .07). To test metric invariance the CFA loadings were constrained to be equal. This model's fit was: X^2 (164) = 306.59, $p < .001$. The difference between constrained and unconstrained model was non-significant: ΔX^2 (12) = 19.94, $p = .068$. This suggests that the strength of the relationships between items and their underlying constructs are the same for both groups. Next scalar invariance was tested by constraining the loadings and intercepts. This model's fit was X^2 (176) = 328.30, $p < .001$. The difference between this model and the unconstrained model was significant: ΔX^2 (12) = 21.70, $p = .041$. These results demonstrate that there is scalar, but not configural or metric variance between genders. The results for this CFA are presented in Table 7.7. Variation in factor loadings, alongside correlations, explain the way measurement invariance was not fully met, and suggests gender variation in the ways GAH and GAL is observed within the developed scales.

Table 7.7 *The Results of Fitted CFA Model Across Genders*

		Male	Female
Latent Variable	Items	β	β
GAH			
	I take responsibility in groups	.76	.74
	I can be forceful when I want something done	.52	.56
	I usually offer to present group projects	.75	.66
	I stick my neck out to get ahead at work	.50	.77
	Work is more fun if there is an element of competition	.67	.62
	I like to be in control of events at work	.59	.62
	I prefer to manage my team than be managed	.71	.68
GAL			
	Taking the team out for a social event helps with team bonding	.45	.52
	It is important to encourage individual talent at work	.49	.57
	I am happy to adapt my working style to fit in with my manager	.60	.66
	I try to calm things down whenever there is conflict between colleagues at work	.57	.70
	I gain personal satisfaction if people ask me for help	.55	.55
	I can talk to anyone at work, regardless of their rank	.57	.53
	I feel valued when others include me in their plans	.66	.61
Correlations	GAH ~ GAL	.75	.66

Note: All coefficients are significant at the $p < .001$ level.

7.4.5.2 Measurement Invariance: Ethnicity

The method described above was repeated to investigate measurement invariance between ethnicities. 209 individuals identified as white and 101 identified as other. Similar to the gender model, configural invariance was found ($\chi 2$ (152) = 264.66, $p < .001$; GFI = .99; CFI = .91; RMSEA = .06). Metric invariance was also found (constrained model fit: X^2 (164) = 278.71, $p < .001$; ΔX^2 (12) = 14.06, $p = .29$), but scalar invariance was not found (constrained model fit: X^2 (176) = 310.88, $p < .001$; ΔX^2 (12) = 32.17, $p < .001$). These results demonstrate that there is scalar, but not configural or metric, variance between ethnicity. The results for this CFA are presented in Table 7.8. Variation in factor loadings, alongside correlations, explain the way measurement invariance was not fully met, and suggests ethnic variation in the ways GAH and GAL is observed within the developed scales.

Table 7.8 *The Results of Fitted CFA Model Across Ethnicity*

		White	Other
Latent Variable	Items	*β*	*β*
GAH			
	I take responsibility in groups	.80	.57
	I can be forceful when I want something done	.62	.34
	I usually offer to present group projects	.73	.56
	I stick my neck out to get ahead at work	.65	.61
	Work is more fun if there is an element of competition	.62	.66
	I like to be in control of events at work	.58	.65
	I prefer to manage my team than be managed	.67	.71
GAL			
	Taking the team out for a social event helps with team bonding	.40	.56
	It is important to encourage individual talent at work	.49	.55
	I am happy to adapt my working style to fit in with my manager	.59	.62
	I try to calm things down whenever there is conflict between colleagues at work	.61	.60
	I gain personal satisfaction if people ask me for help	.56	.51
	I can talk to anyone at work, regardless of their rank	.50	.63
	I feel valued when others include me in their plans	.60	.72
Correlations	GAH ~ GAL	.66	.81

Note: All coefficients are significant at the $p < .001$ level.

7.5 Discussion

The objective of this study was to establish the psychometric properties of a new short measure for GAH and GAL, given that no such measure currently exists that operationalises Socioanalytic Theory. As such, and being a new measure, research has so far been unable to test its assumptions regarding work performance. The establishment of a new short measure for GAH and GAL was achieved using the use of EFA as a method to discard unsuitable items, as well as to select items that best measure GAH and GAL. Following EFA 14 items remain. CFA was also conducted in order to establish whether the 14 items collectively represented a single latent factor. This decision was motivated by the fact that there was a disagreement between the number of factors identified by the scree plot and the EFA pattern matrix. Subsequently, the CFA did identify two latent factors, which were highly correlated (.70). As a result of these analyses, the objective of developing a preliminary measure of ST was achieved. Figure 7.2 below shows a quadrant of preferences, and is indicative of how

someone might behave at work, depending on their preferred style of interacting with other people at work.

Table 7.9 *Working Style Preferences for Career Success*

GAH	Low **GAH** + High **GAL** Those with low scores on the GAH scale, and high scores on the GAL scale indicate they are someone pleasant to work with, are good team players, agreeable, flexible and calm, but with a low need for recognition or status, and little drive to succeed.	High **GAH** + High **GAL** Those with high scores on both the GAH and GAL scales indicate they are pleasant to work with, will nurture others' as well as their own ambitions, are self-motivated, calm, confident and are driven to achieve goals. They will also develop and maintain good working relationships.
	Low **GAH** + Low **GAL** Those with low scores on both the GAH and GAL scale indicate they are not likely to make an impact at work. They show no drive or ambition, have no need for recognition or power, and lack the interpersonal skills to develop effective working relationships. They indicate a low contribution to the group or the organization.	High **GAH** + Low **GAL** Those with high scores on GAH and low scores on GAL indicate someone highly driven, goal focused with a need for status, power and recognition. Given the low GAL scores, they may demonstrate a lack of consideration for others, and may alienates others through their own self-interest.
	GAL	

*low/high refers to lower/higher overall scores on the GAH/GAL scale dimensions

7.5.1 Criticisms and Limitations of the study

There are limitations in this research which would be addressed in any future studies, and recent guidelines from the British Psychological Society (BPS, 2016) and the International Test Commission (ITC, 2014) would be an invaluable addition to any future research. While "standards which guide test use in research are less common" (ITC, 2014, 3) than those for use in organizational settings, this research has attempted to meet most of the criteria. The ICT states that data used for tests in research "typically are used to evaluate phenomena" (ITC, 2014, p.3), and to advance knowledge and understanding, as has been conducted in this research. Any new measure is experimental and for research only.

7.5.2 Item Development and Terminology

Criticisms of this study are mainly with the item development and test construction. Hinkin's (1998) model was followed for this investigative study, and there was an assumption that four experienced academics and practitioners, experts in their field, would offer insight, judgement and practicality to the design of the item statements. Notwithstanding their generosity of time and support for this research, there are, nevertheless, some statements which are clearly idiomatic, and may be prone to bias, as well as cultural unfairness and which, in hindsight, should have been removed prior to putting the questionnaire onto MTurk for data collection. That these were included may be due to the familiarity of the assessors, and the researcher, with the HPI. For example, "I stick my neck out to get ahead at work" is a style of speaking that may not be familiar to some nationalities and "taking the team out for a drink or dinner helps with team bonding" might cause offence in Muslim countries. Future studies would need to consider these limitations and adapt language accordingly, in order to remove bias across cultural populations (van de Vijver & Tanzer, 2004). Nevertheless, it was considered acceptable to use them in this investigatory research study as HAS has used the HPI extensively for cross cultural and international use for over 30 years (HAS, 2016).

A further critique of this study, and related to the familiarity of HPI terminology, is the lack of inter rater reliability which should have been conducted to confirm that the statements were valid and reliable, and would be included in any future studies. Inter-rater reliability demonstrates the consensus raters' scores have with another, and particularly so where they may be ambiguity of terminology (Anastasi & Urbina, 1997). Factors such as familiarity of the measure to be rated, or the rater's experience of scoring a measure may impact on the results, as could the situation, and time, in which they completed the rating. When considering inter-rater reliability, Stemler (2004) cautions that "the task of judging behavior invites some degree of subjectivity" (Stemler, 2004, p.1) and that final ratings will depend upon the rater's subjective interpretation of the criteria. Further, there is the possibility of chance agreement between raters (Grayson & Rust, 2001), which suggests that the use of just 4 raters may be too limited to ensure item validity. Future research would, therefore, include inter-rater reliability for all item statements with a wider pool of raters

7.5.3 Ethical Considerations

The ITC recommends requiring informed consent, ensuring the privacy of personal data and telling participants about any possible data results (ITC, p.6). The ITC (2014) and the BPS (2016) ethical considerations were met both by HAS when collecting data for studies 5 and 6, when feedback was offered at that time to participants, as well as by the researcher when collecting data for studies 7-9. In line with both the ITC (2014) and BPS (2016) guidelines for best practice in the use of psychometric testing, participants for studies in Chapters 7-9 were informed that all data was anonymous; that all data was confidential to the researcher; that no individual details would be asked for; that they were free to withdraw at any time; that no data would be forwarded to a third party; that this was for research purposes only and that there would be no feedback.

7.5.4 Data Sampling

Sampling will also be discussed in Chapter 10, alongside general criticisms of the study, but is addressed here briefly pertaining to this study. Data collection via MTurk was purposefully unrestricted so participants from all countries could participate, in an attempt to garner as wide a collection pool as possible, in line with the use of the Hogan instruments. Restricting data collection by countries in future studies could be considered, though it was not deemed necessary for this research. Indeed, the data shows a wide, cross-cultural data set was collected. Furthermore, using MTurk as a data collection source, while useful to, and extensively used by social psychology researchers, has some recognised limitations, including ethical concerns. Nevertheless, there is the possibility that this study contains volunteer sampling with participants self-selecting topics, via the MTurk site, that attract them, thereby leading to bias, and the potential for an unrepresentative data collection. This will be discussed further in Chapter 10.

This study found that both higher order factors were distinct, despite showing a correlation of .70, which appears to be due to the high correlation of extravert items in both GAH and GAL. Both GAH and GAL seemingly indicate individual styles of behaviour at work, and reflect different styles of engagement. The results here show two distinct ways in which people engage with others, and with their work, in order to

achieve goals. The study of how people engage at work is a developing research area which investigates the factors that enhance an individual's experience of work; and which factors influence, and encourage engagement (Schaufeli, Bakker, & Salanova, 2006). Work engagement includes aspects of attitude and behaviour which results in a positive experience of work for that individual, and increased performance for the organization Schaufeli, Bakker & Salanova, 2006). Moreover, work engagement is considered a useful and valid measure of performance (Christian, Garza, & Slaughter, 2011; Erikson, 2005; Saks, 2006; Schaufeli, Bakker, & Salanova, 2006) and is included in the next validation study in Chapter 8.

Chapter 8: Studies 4 and 5 – New Measure Validation

8.1 Introduction

The results in Chapter 7 were sufficiently encouraging to extend the research. The objective of the study was to establish the psychometric properties of a new short measure for GAH and GAL. CFA showed this new measure comprised of 14 items: 7 items for each of GAH and GAL. Although GAL and GAL were found to be two distinct higher order factors, there was a high correlation between them (.70) positing the question of there being just one higher order factor. Analysis of the results, however, found that this correlation was mainly due to shared aspects of Extraversion. GAH accounted for 32.61% of the variance, and GAL 5.86% of the variance. This chapter seeks to validate the new measure against existing measures and to argue for two distinct higher order factors.

8.2 Measure Validation

Test validity is the extent to which a test measures what it sets out to measure, and offers "evidence that a study allows correct inferences about the question it was aimed to answer" (Field, 2009, p.795). Classically, validity was divided into content, criterion, face and construct validity, all referring to various aspects of overall validity (see Cronbach, 1949). Cronbach's alpha, a statistical measure of internal consistency or reliability of items in a psychometric test, measures how reliable the items are when measuring the same construct, though some argue that validity is best seen as a single construct (Messick, 1995). Historically, a Cronbach's alpha of 0.70 has been required to assert that a test is reliable as a measure, though this does not necessarily ensure its validity. Validity is the most important consideration in any measure as it refers to the relevance of the results the test gets. For instance, if measuring for Extraversion, the validity of the test lies in the fact that personality traits directly related to Extraversion, and considered to be stable

over time, are being measured, rather than transient moods prone to fluctuation. Further, the validation process tests for incremental validity over and above other measures which ensures the measure is useful and applicable.

Considering the above, studies were needed to address the validity of the new measure, and to assess how useful the new measure is against other measures. As the aim is to measure behavioural tendencies at work, it should be positively related to job performance over and above other related personality traits. Moreover, it is important to identify how the two constructs of GAH and GAL are related to other personality traits to better understand how they fit within other behavioural taxonomies. This chapter identified and confirmed the validity of the measure, and comprised of two studies:

Chapter 8 Part 1 – Study 4 – This study explored the relationship between GAH and GAL, with the Big Five and a measure of work engagement. Regression analyses explored the incremental validity of the GAH and GAL constructs in the prediction of job performance.

Chapter **8 Part 2 – Study 5** – This study explored the incremental validity of the GAH and GAL constructs, over the Big Five, Core-Self Evaluations and the Dark Triad, in the prediction of job performance.

Part 1: Study 4 – New Measure Validation

Investigation into incremental validity of the new measure over and above measures of the Big Five Factors and Work Engagement on job performance

8.3 Introduction to Part 1

The results from Chapter 7 indicate that both GAH and GAL demonstrate individual styles of engagement at work, and that these depend upon individual differences of personality. For instance, the GAH factor included an individual with a tendency to take responsibility, being forceful, offering to present projects, being in control of events and preferring to manage than be managed, all of which indicate an individual high on Extraversion, Ambition and Autonomy. The GAL factor included team bonding, encouraging individual talent, calming conflict between colleagues, enjoying being asked for help and feeling valued when others include them, indicating an individual high on Extraversion, Adjustment and Agreeableness. The development of any new measure is predicated upon the premise that the new measure offers something that other measures do not. This new measure of GAH and GAL contains 14 items (Appendix 8.1), far fewer than the HPI and MVPI. It combines both personality and values, motivations and preferences in one short questionnaire, something that has not been done before with the HPI and the MVPI, and will offer utility in assessing how someone will perform at work. The measure will be validated against other measures of personality as well as a measure of job performance.

8.4 A brief recap of The Big Five Factors of Personality and its use in this study

The Big Five Factors of personality have been explained fully in Chapter 3, and will be briefly explained again here. The Five Factor Model (FFM) comprises five broad traits

of personality; extroversion (E), openness (O), neuroticism (N), agreeableness (A) and conscientiousness (C) (see Costa & McCrae, 1985; Goldberg, 1990; Wiggins, 1996). The FFM is generally regarded as robust, comprehensive and stable across age groups and cultures and underpins many psychometric measurements for personality (Connor-Smith & Flachsbart, 2007), though criticisms of it are acknowledged, and discussed in Chapter 10.

Furthermore, the Big Five Factors have been extensively investigated and demonstrate the impact of personality on performance at work: for instance, Adjustment and Prudence predict performance in fire-fighters (Kusch, Moser, & Kassner, 2012), Adjustment, Conscientiousness and Agreeableness predict individuals being seen as being stable, reliable and pleasant to work with and for (Cattell, Eber, & Tatsuoka, 1970; Chamorro-Premuzic, 2007; Chidester et al., 1991; Furnham, 1991; Hogan & Holland, 2003; Jessup & Jessup, 1971), and how personality differences of Extraversion and Introversion affect aviation flight crew success in training (Jessup & Jessup, 1971). The FFM is used in this study for validation purposes in the form of the TIPI, a short measure of the FFM, discussed below. Nevertheless, and despite its extensive use, critics argue that the FFM's limitations need taking into consideration too (Block, 1965, 1995, 2010; Boyle, 2008; Paunonen & Jackson, 2000). Limitations include the exclusions of many facets of human behaviour, for example, sensuality and joyfulness, as well as the FFM's static view of personality (Terracciano, Costa & McCrae, 2006; Wilks, 2009). A comprehensive discussion of the limitations of the FFM are found in Chapter 10. Other considerations involved in choosing measures is that of the bandwidth-fidelity dilemma (Ones & Viswesvaran, 1996), considered now.

8.5 Bandwidth-Fidelity Dilemma

When selecting measures for individual differences, researchers need to consider a choice between tests that assess for a narrow, but specific, range of factors (fidelity), or a broader, more multi-faceted range with fewer details, but which allows for wide assessment of general criteria (bandwidth). This is termed 'the bandwidth dilemma' by Ones and Viswesvaran (1996), as opting for one necessarily means omitting the other.

The bandwidth-fidelity problem is that "greater fidelity is achieved at the loss of bandwidth, and increased bandwidth comes at the price of fidelity" (Hogan & Roberts, 1996, p.627). Hogan and Roberts (1996) suggest that this may apply for measures of educational attainment where intelligence, for example, is a clear measurable criterion and amenable to being assessed with a high fidelity, narrow bandwidth (Hogan & Roberts, 1996). They argue, however, that while researchers should use high fidelity, narrow bandwidth assessments, it is less a case of bandwidth vs. fidelity than a case of a trade off in deciding to use a measure with narrow or broad bandwidth.

Personality measures, using a narrow bandwidth, are in danger of having too few items, and thus missing out on important measures of individual differences. Ones and Viswesvaran (1996) state that "human resources practitioners and researchers appear to assume that more specific and narrow measures of personality traits result in better and more fine-grained understanding of the person, and therefore ought to be preferred over global measures" (Ones & Viswesvaran, 1996, p.609). In personality selection, however, Ones and Viswesvaran (1996) advocate measures for broader personality traits that are seen as better for both prediction and explanation. Where narrow but contextualised measures are used, however (such as the HPI and the GAH/GAL measure), and with clear outcome variables such as performance, it is expected that incremental validity will be found, over and above broad measures such as the FFM (Akhtar, Boustani, Tsivrikos, & Chamorro-Premuzic, 2015).

Hogan and Roberts (1996) stated that narrow based trait measures explain aspects of personality traits more effectively than those of broader measures (Tyler, 2014), but that the nature of the criterion should dictate the choice of predictors in order to enhance validity, rather than the researcher being forced into the 'dilemma' of whether to choose broad or narrow based measures (Tyler, 2014). The criteria used here are performance outcomes and the new measure of GAH and GAL is a narrow-bandwidth measure using contextualised measures.

8.6 Performance Outcomes

Performance outcomes are measurable outcome criteria achieved by an individual in relation to their role at work, examples of which include how many deadlines are met, or how much income is generated, in a given timescale. Primarily, work performance is behaviour by an individual aligned to organisational goals, and can be either overt such as observed behaviour, or covert such as decision-making processes (Campbell, McCloy, Oppler, & Sager, 1993), but both relating to measurable outcomes. It was debated earlier whether performance at work is best measured by supervisor ratings or self-ratings, and doubts as to the use of supervisor ratings were raised when research showed that these were found to be prone to bias and unreliability in terms of performance criteria (Pytlik-Zillig, Hemenover & Dienstbier, 2002). For example, core aspects such as openness and emotional stability were less easy to observe and thus assess objectively, despite being key to organisational success (Funder, 1995; John & Robins, 1993; Pytlik-Zillig, Hemenover, & Dienstbier, 2002). Further, supervisor ratings and performance criteria are often measuring different things and can be biased due to personal assumptions and preferences (Cook 2009). The performance outcomes designed specifically for this study are detailed below.

8.7 Work Engagement

Studies on employee engagement can be traced to Kahn's (1990) social-psychological construct on personal engagement. Kahn argued that employees choose whether to invest their cognitive, emotional and physical self into their work and that this reflects on their work. The research into engagement has increased over the last 20 years, as have the number of definitions (Peccei, 2013) and the general interpretation of engagement on work performance tends towards a positive interpretation (Truss, Shantz, Soane, Alfes, & Delbridge, 2013, Vance, 2006). Schaufeli (2014) identifies two interpretations of engagement; work engagement and employee engagement. Work engagement refers to the relationship of the employee with his or her work, whereas employee engagement may also include the relationship with the organisation (Schaufeli, 2014). According to Bailey, Madden, Alfes, & Fletcher, (2015), the most frequently adopted definition is work engagement, and a measure to assess for this, the

Utrecht Work Engagement Scale (UWES-9, Schaufeli, & Bakker, 2003) has been adopted in around 86% of previous work engagement research studies (Bailey et al., 2015).

There is a tension between narrowing the definition of engagement so far that it becomes of limited interest, and broadening it too widely, so that it loses its distinctiveness, and one that has not yet fully been resolved (Schaufeli 2014). Given the breadth of studies using the UWES-9 definition, this study will adopt the work engagement definition. Engagement is defined as "a fulfilling work-related state of mind that is characterised by "vigor, dedication and absorption" (Schaufeli et al., 2006 p. 702) and as "a distinct and unique construct that consists of cognitive, emotional, and behavioral components that are associated with individual role performance" (Saks, 2006, p.602), all of which lead to better organisational performance (Robertson & Cooper, 2010). Schaufeli (2014) identifies two main interpretations of engagement; work engagement and employee engagement. Work engagement refers to the relationship of the employee with his or her work, whereas employee engagement may also include the relationship with the organisation (Schaufeli, 2014). According to Bailey et al. (2015), the most frequently adopted definition is work engagement, and more specifically the Utrecht Work Engagement Scale (UWES-9) (Schaufeli & Bakker, 2003), which, according to Bailey et al. (2015), has been adopted in around 86% of previous engagement studies.

Research on employee engagement shows that it correlates with many positive aspects, much sought after by organisations, and is considered a viable measurement of performance outcome. Engaged individuals are argued to be more productive (Erikson, 2005), which is a key reason organisations ought to find out how to assess for this in selection. Furthermore, they are more enthusiastic, happier at work, psychologically healthier, flexible and resilient towards work demands, and can enthuse others by their own engagement (Bakker, 2009). Despite the overlap between job satisfaction, involvement, commitment and focus, work engagement is quite distinct as a concept, and seemingly more encompassing, and relates to physical, emotional and psychological involvement with both the role and the organization (Hallberg & Schaufeli, 2006; Wefald & Downey, 2009). A critique of engagement and potential dark sides are discussed below.

8.8 The Influence of Work Engagement on Performance: Social Exchange Theory

Work engagement (WE) is considered a valid and reliable predictor of a variety of positive performance outcomes including employee, organisational and financial outcomes (Bates, 2004; Baumruk, 2006; Baumruk & Marusarz, 2004; Saks, 2006), and this has led to a growing interest in the construct in recent years (Akhtar et al., 2015). Work engagement can relate to either job engagement, or organisational engagement and the two manifest in quite different ways. For example, an individual can be fully engaged with their own job, but not necessarily with their organization.

Saks (2006) argues that an explanation for such engagement is found in Social Exchange Theory (SET). The core tenet of SET is the assumption that a reciprocity of exchanges occurs between agents, resulting in mutual obligations towards each other, and includes trust, loyalty and commitments generated by each exchange (Cropanzano & Mitchell, 2005). These exchanges can be social, material, or psychological between the agents, and in a work environment, it will be between individuals, each other and the organisation. Reciprocity is a friendly re-action towards someone who has been helpful, whereby kindness and co-operation are generated towards each other, (Fehr & Gächter, 2000), and resonating with Adler's theory of Social Interest (Adler, 1979). According to Saks (2006), the mutual and reciprocal exchanges between individuals and organisations results in engagement at work, although recent research suggests otherwise, with only 30% of the workforce being engaged at work (Gallup Employment Engagement Survey, 2015).

A recent study which investigated individual differences and engagement considered the relationship between personality differences and organisational citizenship behaviours (Matamala, 2011). In Matamala's research, focus was on the relationship between engagement and the Big Five personality factors of Extraversion, Neuroticism, Conscientiousness and Agreeableness. Matamala notes that few studies "have examined the relationship between engagement and job performance" (Matamala, 2011, p.10), and even fewer have considered these in tandem with individual differences. She argues that the focus on job and organisational resources as antecedents of work

engagement "has limited the examination of more stable personal antecedents such as personality traits" (Matamala, 2011, p.12), and shows how engagement is linked to individual differences. A more recent study, including the HPI (Hogan & Hogan, 1997) points to an 'engageable personality' where personality differences act as antecedents towards engagement (Akhtar et al., 2015), and argues that engagement needs to be considered from two angles:

a) What are the antecedents of engagement?
b) What are the consequences of engagement?

While Saks' (2006) research demonstrates various factors which have an impact on job and organisational engagement, there is a lack of consideration for a key area of work psychology, namely that of personality differences. There is, however, a suggestion that future research "might also consider individual difference variables that might predict employee engagement" (Sake, 2006, p.614), citing Maslach's research which shows that some personality variables including hardiness, self-esteem, and locus of control are related to engagement (Maslach, Schaufeli, & Leiter, 2001).

This chapter considers what is a recent area of research, that of the influence of personality on engagement. Personality traits have been shown to significantly correlate with engagement (Xanthopolou, Bakker, Demerouti, & Schaufeli, 2009), and a recent research study found several correlations with the big five personality factors and engagement (Akhtar et al. 2015). Most of the big five factors predict engagement in some way. For example, high levels of Extraversion and low levels of Neuroticism predict employee engagement, (Akhtar et al., 2015), Conscientiousness predicts engagement through a strong sense of responsibility and efficacy (Kim, Shin, & Swanger, 2009; Warr, 2011), Agreeableness demonstrated engagement through the willingness to work as part of a team (Morgeson, Reider & Campion, 2005; Wefald, Reichard, & Serrano, 2011), and Openness demonstrated some engagement, but was found to have too many dimensions to be reliably correlated with it (Griffin & Hesketh, 2004). The relationship between personality and engagement, and the argument that engagement is a valid performance outcome underpins the use of the UWES-9 as a measure against which to validate the GAH and GAL in this study.

8.9 Hypotheses

The following hypotheses will be tested:

H1. GAH/GAL will be positively correlated with the Big Five Factors (TIPI):

H1.1. GAH/GAL will be positively correlated with Extraversion;

H1.2. GAH/GAL will be positively correlated with Openness;

H1.3. GAH/GAL will be positively correlated with Agreeableness;

H1.4. GAH/GAL will be positively correlated with Conscientiousness;

H1.5. GAH/GAL will be positively correlated with Emotional Stability.

H2. Both GAH and GAL will be positively correlated with Engagement.

H3. GAH/GAL offers incremental validity over the Big Five (TIPI) and the UWES-9 (Engagement) in the prediction of Work Performance.

H4. GAH/GAL offers incremental validity over the Big Five in the prediction of Engagement.

8.10 Method

8.10.1 Participants

The study consisted of N = 310 adult workers (Females = 136, 43.7%; Males = 172, 55.5%, Other = 2, 0.6%). Ages were 18 to 74 years (18-24 years, 10.6%; 25-34 years, 45.3%; 35-44 years, 26.4%; 45-54 years, 12.2%; 55-64 years, 4.5%; 65-74 years 1%). The marital status of participants was: Single 110 (35.4%); Married 149 (47.9%); Divorced 11 (3.5%) Widowed 4 (1.3%); Living with a partner 37 (11.9%). The ethnicity of participants was: White 29 (9.4%) White Other 180 (58.1%); Black/Caribbean 21 (6.8%); Black British 1 (.3%); Asian British 5 (1.6%); Asian/Indian Pakistani 58 (18.7%); Chinese/Japanese/Korean 5 (1.5%); South American 2 (.6%); Other 9 (2.9%). Occupations included: Manual worker 29 (9.4%); Semi-skilled 42 (13.5%); Skilled 127 (41.0%); Supervisory 46, (14.8%); Managerial

55 (17.7%); Senior Management 9 (2.9%); and CEO 2 (.6%). Educational levels were: Secondary school 43 (13.9%); Further Education, 50 (16.1%); University under-graduates 124 (40.0%); University post-graduates 54 (17.4%); MBA 27 (8.7%); MPhil/PhD 8 (2.6%); and Professional (LLM, CPsychol/CIPD) 4 (1.3%). The annual income of the participants was: <£10,000, 43 (13.9%); £10-25,000, 74 (23.9%); £25-40,000, 85 (27.4%); £40-50,000, 53 (17.1%); £50-65,000 27 (8.7%); £65-80,000, 15 (4.8%); >£80,000, 13 (4.2%).

8.10.2 Measures

8.10.2.1 GAH & GAL new short measure x 14 items (see Appendix 8.1)

The 14-item instrument, developed in the previous chapter, was used to measure an individual's behaviours in relation to GAH and GAl. The two scales were found to have acceptable levels of internal consistency (GAH = .84; GAL = .77). The GAH and GAL were scored by computing an average of a participant's responses.

8.10.2.2 The Ten Item Personality Inventory (TIPI, Gosling, Rentfrow, & Swann, 2003) (see Appendix 8.2)

The Ten Item Personality Inventory (TIPI), is a brief measure of the Five Factor Model developed particularly for research purposes (Gosling, Rentfrow, & Swann, 2003). It consists of ten items with two items representing each factor of the FFM: Extraversion (α = .73), Agreeableness (α = .41), Conscientiousness (α = .47), Emotional Stability (α = .59), and Openness to Experience (α = .43). The statement: "I see myself as…" is followed by ten items containing two traits such as "I am sympathetic, warm" and "I am disorganized, careless. Participants are required to score on a 7 point Likert scale from 1=strongly disagree, to 7 = strongly agree. Estimates of internal consistency show: Extraversion (Cronbach's α = .61), Agreeableness (α = .20), Conscientiousness (α = .36), Neuroticism (α = .31), and Openness (α = .18) (Gosling et al., 2003). Reliability estimates over six weeks showed an average correlation of .72 for the five dimensions (Gosling et al., 2003).

Despite the limitations of the psychometric properties of the TIPI, it is argued to be a "reasonable proxy for longer Big-Five instruments" (Gosling, et al, 2003, p.523), and that "although somewhat inferior to standard multi-item instruments, the instruments reached adequate levels in terms of (a) convergence with widely used Big-Five measures in self, observer, and peer reports, (b) test-retest reliability, (c) patterns of predicted external correlates, and (d) convergence between self and observer ratings" (Gosling et al., 2003. p.504). Cronbach's alpha for internal reliability was 0.68 for Extraversion, 0.40 for Agreeableness, 0.50 for Conscientiousness, 0.73 for Emotional Stability (Neuroticism reversed) and 0.45 for Openness to Experience. Several researchers from Europe and the USA (Ehrhart, Ehrhart, Roesch, Chung-Herrera, Nadler & Bradshaw, 2009; Hofmans., Kuppens., & Allik, 2008; Muck, Hell & Gosling, 2007), investigated the TIPI for validity and reliability and found that it is a useful and valid measure for assessing broad personality domains particularly for research where resources are limited, and recent research from the UK supported the validity of the TIPI for research purposes (Furnham, 2008; Holmes, 2010). The TIPI scale was scored by computing the average of a participant's responses.

8.10.2.3 The Utrecht Work Engagement Survey – 9 items (UWES-9, Schaufeli, W. & Bakker, A. 2003) (see Appendix 8.3)

The UWES-9 is a 9-item 6-point Likert scale measuring work engagement, and was developed as a shorter measure of the original UWES 17 measure (Schaufeli & Bakker, 2006). It assesses for work engagement with three scales: vigour, dedication and absorption. The 9 questions include items such as "I feel happy when I am working intensely" and "When I get up in the morning, I feel like going to work". Participants are required to score on a 6 point Likert scale (1=never, 6 = always) to indicate how strongly they agree or disagree with these statements. The internal consistency (Chronbach's alpha) of the three scales of the UWES-9 are equal to, or exceed .70 (Nunnally & Bernstein, 1994; Schaufeli & Bakker, 2001) and correlations between the three scales exceed .65 (Demerouti et al., 2001; Salanova et al., 2000). The UWES-9 scale was scored by computing the average of a participant's responses.

Validation and reliability studies on the UWES-9 are extensive and cross cultural, with each study showing similar degrees of validity and reliability. Studies across ten countries showed Cronbach's alpha for the three scales of the UWES-9 to be between .60 and .88, and for the total nine items to be between .85 and .92 across all countries, thus they exceed the value of .70 (Nunnally & Bernstein, 1994; Schaufeli & Bakker, 2006). Reliability studies over one year, with the UWES-9 administered twice, found coefficients for Vigour were .61- 71, Dedication, .56 – 66, and Absorption .60-68 across countries. Reliability for all nine items was between .64 and .73 (Schaufeli & Bakker, 2006).

Further, research from five studies over three years, with N=9404 from five different occupational samples found the UWES-9 to have good construct validity, and can be recommended for use in research (Schaufeli & Bakker, 2001; Schaufeli & Bakker, 2003; Seppälä, P., Mauno, S., Feldt, T., Hakanen, J., Kinnunen, U., Schaufeli, W. & Tolvanen, A. 2009). Construct validity and reliability of the UWES-9 has also been demonstrated in cross-cultural studies, (Balducci, Fraccaroli, & Schaufeli, 2010; Panthee, Shimazu, & Kawakami, 2014; Schaufeli, Bakker, & Salanova, 2006; Seppälä, et al, 2009; Shahrazad, Sulaiman, & Zahoni, 2016). All studies show that the UWES-9 has good construct validity, and that the 9-item measure can be recommended for research.

8.10.2.4 Performance Measures: Item Selection and Development

In line with the personality item development in Chapter 7, the same procedure was conducted for the design and development of 74 performance items. The performance measures designed in this study were based on the literature review (Chapters 1 – 3) and linked to behaviours seen as being directly associated with GAH or GAL. Volunteer raters were asked to rate the items according to how far they reflected performance at work on a scale of 1 – 5, and the statements were designed, to reflect actual performance outcomes, achieved over the last year by participants at work (See Appendix 8.4). Items that received ratings of four or five were retained. Fifteen items were discarded, and nine items were reversed coded following feedback. Examples of items removed were Q14. "I have offered practical solutions to my manager about

department problems" and Q37. "My manager has formally commended me on taking risks to achieve my goals".

In total, 59 performance items remained, following which steps were taken to reduce the number of items. First, a correlation table was produced that contained all items (Table 8.2). Any two items that shared a coefficient less than .40 were discarded. The subsequent items were then subjected to Principal Axis Factoring (PAF) with an Oblimin rotated factor analysis procedure. Furthermore, Kaiser-Meyer-Olkin's value was assessed with each factor analyses to ensure that indeed the data was suitable for factor analyses (scores above .60 are recommended; Kaiser, 1970), alongside checking for low item communalities and discarding items that had loading coefficients of less than .40 or crossed-loaded (Hinkin, 1998; Williams, Onsman, Brown & Rasch, 2012). Items that loaded on a single dominant factor (i.e. accounting for at least 35% of the variance) were retained and tested for internal consistency.

As evidenced by the final pattern matrix and scree plot (Appendix 8.5), a single factor was found that consisted of 14 performance items (Cronbach's Alpha = .91) and accounted for 42.81% of the variance (see Appendix 8.6). A CFA model also found all the items to load into a single latent factor with an average of 43% of the variance accounted for in each item (CFI model fit: $\chi 2$ (77) = 200.56, $p < .001$; CFI = .93; GFI = .91; RMSEA = .07). The factor structure of the model was testing using EFA and CFA techniques. EFA showed it is one factor, so not multidimensional, and the CFA confirmed that. The items are listed below Table 8.1.

While supervisor ratings are considered reliable when aligned to clear and measurable performance criteria (Hinkin, 1998), they are also considered the most biased in terms of personality likes and dislikes, and this questionnaire is expected to reflect more accurate measures of individual performance. Self-ratings based on specific achievements also ensure that performance, which might otherwise be missed by the supervisor, is measured. The questionnaire was anonymous and was considered low stake, there being no outcomes or feedback from the results, so there was no reason for the respondents to give answers they thought were correct or socially desirable. The limitation of self-reports, nevertheless, will be discussed in Chapter 10. In order to assess how far the new measure for GAH and GAL can indicate how someone will

perform at work, performance items were developed in line with theory on GAH and GAL, and measured an individual's actual performance over the previous year.

Table 8.1 Job Performance Indicators - 14 statements

I have reviewed other peoples' performance
I have made decisions which have impacted on my team
I presented my work to large audiences
I sought positions of authority
I undertook professional development to further my career goals
I was asked by my manager for my strategic vision regarding projects
My views have been incorporated into company policy
When a colleague made a mistake, I supported them in front of the team
I organised a social event for a colleague's birthday
I contributed to my company's charity collection
I received a letter of thanks from a satisfied client/customer
I changed my holiday dates in help a colleague with personal needs
I offered to teach a new colleague relevant skills in my own time
When there was office conflict, I offered to mediate

8.10.3 Procedure

The four measures: the new short measure of GAH & GAL, Performance Outcomes x 14 items, the TIPI , the UWES-9 were hosted on an online survey site Amazon's Mechanical Turk (MTurk, 6 November 2014). Participants were asked to read the Confidentiality and Ethics notice before proceeding. Participants needed to accept the terms, and to give their consent knowingly, in order to continue with the questionnaire. A debrief page was included at the end of the questionnaire to explain the research study.

8.11 Results

8.11.1 Descriptive Statistics and Correlations

Descriptive statistics and correlations are shown in Table 8.2 below. The results show that GAH correlates with all the Big Five Factors of personality to some extent; most notable are the positive relationships with Extraversion (r = .50) and Openness (r = .35), while the correlations with Agreeableness, Conscientiousness and Emotional Stability are positive, albeit weaker. Similarly, GAL positively correlated with all Big Five constructs, with the strongest relationships being also found with Extraversion (r = .40) and Openness (r = .34). Both constructs positively correlated with job performance (r > .50) and work engagement (r > .50). Lastly, a strong correlation was again found between GAH and GAL. This confirms that GAH and GAL have significant overlap of behavioural taxonomy with the Big Five as evidenced by the strong correlations both constructs held with Extraversion and Openness. These analyses provide support for H1 and H2. To test the remaining hypotheses regression analyses were used.

Table 8.2 *Bivariate Correlations & Descriptive Statistics between the Big Five Factors, Engagement and Job Performance*

	1	2	3	4	5	6	7	8	9	10	M	SD
1. Gender	—										1.56	0.50
2. Age	-.10	—									2.56	1.03
3. Extraversion	.00	-.02	—								8.17	3.45
4. Agreeableness	-.14*	.13*	.18**	—							10.79	2.46
5. Conscientiousness	-.14*	.20**	.25**	.38**	—						11.43	2.28
6. Emotional Stability	.06	.18**	.32**	.50**	.40**	—					10.51	2.66
7. Openness	-.08	.07	.30**	.39**	.40**	.33**	—				10.14	2.46
8. GAH	-.03	.01	.38**	.27**	.31**	.27**	.23**	—			0.00	0.93
9. GAL	.02	-.06	.50**	.18**	.23**	.26**	.35**	.54**	—		0.00	0.89
10. Engagement	.04	-.02	.40**	.33**	.32**	.31**	.34**	.52**	.73**	—	4.03	1.12
11. Job Performance	.07	-.07	.41**	.19**	.14*	.19**	.28**	.60**	.66**	.53**	0.00	0.96

GAH and GAL both show Means = 0 as these are standardized (Z) scores

8.11.2 Hierarchical Regressions

Hierarchical regressions were conducted to explore the relationship between a set of independent variables (IV) and a dependent variable (DV). In this case, the technique was used to explore the incremental validity of GAH and GAL in the prediction of Job Performance and Work Engagement. To test the incremental validity of the IVs, a hierarchical multiple regression technique was used. A decision was taken to include age and sex in the regression analyses as both are related to performance, (Avolio, Waldman, & McDaniel 1990; (Bowen, Swim & Jacobs, 2000; Green, Jegadeesh & Tang, 2009; Hjort, 1997; Prenda & Stahl, 2001) and inclusion allows for control of their effect when establishing the validity of the measure. When predicting job performance scores, four models were specified:

Model 1: included participants' age and sex;
Model 2: included participants' age, sex and the Big Five scores;
Model 3: included participants' age, sex, the Big Five, GAH and GAL scores;
Model 4: included participants' age and sex, the Big five, GAH and GAL scores and a measure of Work Engagement (UWES-9).

When predicting work engagement scores, three models were specified:

Model 1: included participants' age and sex;
Model 2: included participants' age, sex and the Big Five scores;
Model 3: included participants' age, sex, the Big Five, GAH and GAL scores.

The results of these analyses are displayed in Table 8.3 and Table 8.4. As can be seen in Table 8.3, GAH, but not GAL, significantly predicted job performance scores, alongside Work Engagement, over and above the Big Five. It is interesting to note that the inclusion of Work Engagement in the final model explained an additional 8.4% of the variance in Job Performance scores, with model three accounting for 44% of the variance. In Model 4, both GAH and Engagement predict performance over and above the Big Five and GAL. Lastly, as can be seen in Table 8.4, both GAH and GAL positively predicted Work Engagement over and above the Big Five, accounting for 35% of the variance. These results provide partial support for H3 and support H4.

Table 8.3 *The Results of Regression Analyses Predicting Job Performance*

Hierarchical Regression 1 - Dependent Variable: Overall Performance								
Predictors	Model 1		Model 2		Model 3		Model 4	
	β	*t*	*β*	*t*	*β*	*t*	*β*	*t*
Gender	.07	1.139	.09	1.71	.07	1.55	.08	1.87
Age	-.06	1.051	-.07	1.32	-.02	.48	-.02	.41
Extraversion			.35	6.31***	.11	2.20	.07	1.51
Agreeableness			.10	1.52**	.08	1.52	.05	.97
Conscientiousness			-.02	.29	-.05	1.03**	-.10	2.16*
Emotional Stability			-.02	.24	-.05	0.93	-.06	1.19
Openness			.17	2.82	.05	1.00	.08	1.67
GAH					.53	7.85***	.41	6.41***
GAL					.08	1.20	.02	.24
Engagement							.36	7.36***
df	2, 307		7, 302		9, 300		10, 299	
F	1.336		11.838*		28.163*		35.274*	
Adjusted R-Squared	.002		.197		.442		.526	
R-Square Change	.009		.207		.243		.083	
F Change	1.336		10.502*		16.325*		7.111*	

Note: Relationships are significant is significant at the (***) < .01 level, (**) .01 level, or (*) 0.05 level (2-tailed)

Table 8.4 *The Results of Regression Analyses Predicting Work Engagement*

Hierarchical Regression 2 - Dependent Variable: Work Engagement						
Predictors	Model 1		Model 2		Model 3	
	β	*t*	*β*	*t*	*β*	*t*
Gender	-.03	.584	.00	.06	-.02	.449
Age	.00	.046	-.05	.97	-.01	.26
Extraversion			.30	5.31***	.11	2.04*
Agreeableness			.13	1.99	.09	1.59
Conscientiousness			.18	2.95***	.14	2.50**
Emotional Stability			.05	.76	.02	.41
Openness			.01	.20	-.07	1.37
GAH					.33	4.46***
GAL					.18	2.49**
df	2, 307		7, 302		9, 300	
F	.176		12.082*		19.646*	
Adjusted R-Squared	.001		.219		.352	
R-Square Change	.001		.218		.152	
F Change	.176		11.906*		7.564*	

Note: Relationships are significant is significant at the (***) < .01 level, (**) .01 level, or (*) 0.05 level (2-tailed)

8.12 Discussion

This study sought to validate the new measure against existing measures and to show incremental validity in assessing for performance outcomes. Validation was made against the TIPI, the UWES-9 and a new measure of performance outcomes designed for this study. The study found that GAH offered incremental validity over and above the Big Five Factors of personality in predicting performance and engagement. GAH and GAL both predicted Engagement. Analyses showed a significantly high correlation of .73 between GAL and engagement, questioning whether there was an overlap of these two factors. It is argued that GAL is quite different to engagement, though to engage with work and colleagues, the qualities of GAL would enhance engagement. GAL Adjustment, Interpersonal Sensitivity,, and Sociability, all of which are seen as positive indicators of engagement. The results are discussed below:

H1. GAH/GAL will be positively correlated to the Big Five Factors

H1 was supported. The results showed that GAH and GAL positively correlated with all the Big Five Factors of personality. GAH correlated with Extraversion, Openness, Emotional Stability, Conscientiousness and Agreeableness. GAL correlated with Extraversion, Openness, Agreeableness, Conscientiousness and Emotional Sensitivity. The following five sub-hypotheses: H1.1, H1.2, H1.3 and H1.4, and H1.5, all relating to the Big Five Factors of personality, are discussed together below. GAH and GAL were positively correlated with Extraversion: GAH and GAL. The loadings explain, in part, the high correlation of .70 between GAH and GAL. Extraversion manifests in both getting ahead at work, putting oneself forward to present, lead teams and offer to take on responsibility, as well as getting along with others, facilitating good team work, being open and approachable to colleagues. Aspects of Extraversion loaded onto both higher order factors in this study.

Both GAH and GAL were positively correlated with Openness: GAH .35 and GAL .34. The loadings explain, to some extent, the correlation of .70 that, coupled with Extraversion, will indicate individuals who engage easily with others, and are open to new ideas. Both GAH and GAL were positively correlated with Agreeableness: GAH .18 and GAL .33. Not surprisingly, GAL had a stronger correlation with Agreeableness than GAH. Individuals who strive to get on with others are less likely to be abrasive and more likely to want to co-operate, and compromise, with others. Both GAH and GAL were positively correlated with Emotional Sensitivity (GAH .26; GAL .31), indicating that to get ahead as well as get along with others, emotional stability is important. Individuals with low emotional stability, are difficult to work with, moody, anxious, prone to ill health and conflict and overly sensitive to feedback.

H2. Both GAH and GAL will be positively correlated to Engagement

H2 was supported in this study. Both GAH and GAL positively correlated with Engagement: GAH .52; GAL .73. When measuring for Overall Job Performance: GAH .60 and GAL and .66. As GAH and GAL positively correlate with all the Big Five Factors of personality, and the Big 5 personality traits have been shown to correlate with Engagement (Xanthopolou, Bakker, Demerouti & Schaufeli, 2009), these results demonstrate clear support for H2. Analyses showed a significantly high correlation of .73 between GAL and engagement, questioning whether there was an overlap of these two factors. It is argued that GAL is different to engagement, though the qualities of GAL would enhance engagement and there would be some similarity. GAL includes Adjustment, Interpersonal Sensitivity, and Sociability, all of which are complimentary to, but distinct from, engagement (Schaufeli & Bakker, 2003), and it is these complimentary aspects which has resulted in a high correlation in this study.

H3. GAH/GAL offers incremental validity over the Big Five (TIPI) and the UWES-9 (Engagement) in the prediction of Work Performance.

H3 was partially supported in this study. GAH demonstrated incremental validity over

the Big Five in the prediction of work performance outcomes (Model 3). Of the Big Five Factors, Conscientiousness was a better predictor of Performance than GAL. Nevertheless, while Model 4 found both GAH and Engagement to be better predictors of job performance better than the Big Five, Engagement was the best predictor of job performance in this study, supporting the theories outlined above (Akhtar et al., 2015; Bakker & Demerouti, 2008; Kim, Kolb, & Kim, 2012; Schaufeli & Baker, 2003).

H4. GAH/GAL offers incremental validity over the Big Five in the prediction of Engagement.

H4 was supported and both GAH and GAL showed incremental validity over the UWES-9 in predicting Engagement. Of the Big Five, Conscientiousness and Extraversion both indicated engagement. The high correlation between engagement and GAL suggests that, although distinct, there is an overlap between them. GAL includes Adjustment and Interpersonal Sensitivity, and the UWES-9 includes the three scales of Vigor, Dedication and Absorption (Schaufeli & Baker, 2003). Vigor (*sic*) relates to resilience and persistence; Dedication relates to how meaningful one's work is, being enthusiastic and energetic, and Absorption refers to being fully absorbed and immersed in one's work, (Schaufeli & Bakker, 2003). These aspects of each measure are complimentary and the overlap between results in a high correlation in this study. Future studies could include different measures of engagement, as well as large cohorts to see how far the overlap is repeated. Notwithstanding the positive research studies conducted on engagement, and the results here which indicates that engagement is related to personality differences, and work performance, there are serious, and negative consequences, of work engagement for the individual, and these will be discussed now.

8.12.1 A critique of Engagement

Over the last 20 years, debate has grown over the concept of workaholism and engagement, particularly in how they differ (Schaufeli, Taris, & Bakker, 2006; Schaufeli, Taris, & Van Rhenen, 2008), and how each impact on workplace performance. Workaholism has generally been seen as a negative process resulting in

obsessive, almost addictive, work behaviour, resulting in a detrimental effect on individual well-being and personal relationships (Oates, 1971), endangering their health and happiness (Schaufeli et al, 2006). Other research found workaholism to have positive outcomes and that individuals who worked obsessively were often satisfied, productive, and fulfilled (Korn, Pratt, & Lambrou, 1987; Peiperl & Jones, 2001).

While recent research argues for a positive relationship between engagement and work performance, (Bakker & Demerouti, 2008; Kim, Kolb, & Kim, 2012; Akhtar et al., 2015), the definition of engagement itself remains ambiguous (Macey & Schneider, 2008). There are also concerns about the measurement, and underlying theory of employee engagement (Saks & Gruman, 2014) as well as "a lack of consensus on the meaning of employee engagement as well as concerns about the validity of the most popular measure of employee engagement" (p.155) which posit many questions about its purpose, and its use, in research and practice.

The lack of clarity in the definition of engagement has resulted in several interpretations (Peccei, 2013) with researchers tending to focus on the positive effect it has on performance, (Truss et al., 2013; Vance, 2006). Nevertheless, engagement is usually referred to as a positive process, and reflects the 'good' side of workaholism in that it has all the positives of workaholism; hard work, focus, drive but lacks the obsessiveness that results in ill health and poor quality of interpersonal relationships (Schaufeli et al., 2006). A study on Dutch workers found they worked long hours, but that the workers themselves felt they were not obsessed to do so, and that it is the lack of compulsion to work hard that differentiates the two, (Beckers et al., 2004). It is this definition that has shaped the terminology of engagement, so that its 'goodness' has often been accepted, and the detrimental effects of it on individuals been overlooked. For instance, engagement has been found to relate negatively to various aspects of work including burnout (Montgomery, Peeters, Schaufeli, & Den Ouden, 2003) and ill-health (Demerouti, Bakker, De Jonge, Janseen & Schaufeli, 2001; Schaufeli & Bakker, 2004), whereas engaged employers are healthier and happier (Hallberg & Schaufeli, 2006; Schaufeli et al., 2005). Christian, Garza, & Slaughter (2011) note that evidence has accumulated on the basis that engagement does lead to high levels of performance,

however numerous academics, including Guest (2011), are yet to be convinced that there is such a positive relationship.

8.12.2 The Dark Side of Engagement

The relationship between engagement and these negative outcomes has led to research examining the possible 'dark side of engagement' (Hogan & Chamorro-Premuzic, 2015b; Peccei, 2013), where its supposed positive relationship with performance is questioned (Garrad & Chamorro-Premuzic, 2016). Too high a level of engagement is shown to have detrimental effects on the individual in terms of burnout (Saks & Gruman, 2014), workaholism (Gorgievski et al., 2009), poorer performance (Hogan & Chamorro-Premuzic, 2015b) and lower job satisfaction (Garrad & Chamorro-Premuzic, 2016). Furthermore, the role of leaders on employee engagement (Christian, et al, 2011), is often missing from analysis of employee engagement (Hogan & Chamorro-Premuzic, 2015b).

Meta-analysis research found the impact engagement has on performance is complex, as organisational factors such as leadership styles can affect the way engagement manifests, as much as individual differences. Nevertheless, it is argued to be "a useful construct that deserves further attention" (Christian, et al, 2011, p.89) albeit with, more clarity on what engagement is. Given the debate on engagement, it may be that using it as a validation measure needs more precision in terms of what is being measured. Although the UWES-9 is a validated, and widely used, measure for engagement, a measure of burn-out and work-place stress might be a more useful counterbalance for future validation studies of the GAH and GAL measure.

This first validation study of the new measure sought to confirm two distinct higher order factors of GAH and GAL, to examine whether GAH and GAL showed higher incremental validity over and above the Big Five Factors, and to investigate which factors were most likely to predict Performance. The results demonstrate there are two distinct higher order factors: GAH and GAL and that Extraversion is a key component in both. It was also found that GAH and GAL have incremental validity over and above the Big Five in predicting Performance. In general, these results found GAH to be a

stronger indicator of performance and engagement than GAL. This has implications for selection, recruitment and development and suggests that the meta-factors have useful associations with engagement and performance. Opposite to the 'bright side' of personality is the 'dark side' of personality, containing those traits we tend to consciously keep hidden from others but often unconsciously seep out, such as Arrogance, Manipulation, Perfectionism and Emotional instability (Hogan & Hogan, 2009). In Chapter 8 Part 2 further investigation into the incremental validity of the new measure of GAH/GAL over and above measures of the Big Five Factors, Core Self Evaluations and Dark Triad traits will be conducted.

Part 2: Study 5 – New Measure Validation

Investigation into incremental validity of the new measure over and above measures of the Big Five Factors, Core Self Evaluations and Dark Triad Traits.

8.13 Introduction to Part 2

The results of the study in Part 1 confirmed that there were two distinct factors of GAH and GAL, and that these had incremental validity, over and above the Big Five and Engagement, in predicting Performance. This section includes further validation studies to confirm that the new measure of GAH/GAL is valid and robust, and whether it has incremental validity over other measures. In Part 1 the TIPI was used (Gosling, Rentfrow, & Swann, 2003). The TIPI was designed to measure broad, rather than narrow, domains. Critics of the measure argue that with so few items (just two items per dimension) the measure lacks rigour, reliability and factor structure (Kline, 2000; Wood & Hampson, 2005). Nevertheless, as Gosling et al. (2003) state, it was not designed to address these areas, but rather, designed as a preliminary tool for researchers, which offers a valid and broad scope of the big five personality traits.

In this study, the 50-item International Personality Inventory Pool (IPIP, Goldberg, 1999; Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger, & Gough, 2006), is included to validate the new measure against a more comprehensive measure of the Big Five Factors, and address the criticisms of the TIPI. In addition, the Core Self Evaluation Scale (CSES: Judge, Locke, & Durham, 1997) is included, as well as a measure of the Dark Triad (DT: Jones & Paulhus, 2014), which will measure dysfunctional personality characteristics associated with Narcissism, Manipulation and Psychopathy. The new GAH/GAL measure and Performance Outcomes are also included in this validation study. A brief description of each of the measures is given now, with details of the psychometric properties of each included in Section 8.21.2.

8.14 International Personality Item Pool (IPIP, Goldberg, 1999; Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger, & Gough, 2006) (Appendix 8.7)

The International Personality Item Pool (IPIP) began as a research project in Holland between academics and students, to identity personality items in 1997, and used the lexicon of personality that is most accepted by the public to describe people (Hendriks, 1997; Hendriks, Hofstee, & de Raad, 2002). The IPIP is an international attempt to develop, and continually refine, a set of personality scales, all in the public domain, and available freely for scientific, research and commercial purposes (Goldberg, 2005). The IPIP website has a scoring key available for researchers to download (http://ipip.ori.org/newScoringInstructions.htm). Whereas the TIPI, used in Part 1, was considered by researchers to be a reasonable compromise between precision and efficiency (Jonason et al., 2012), and one that offered a valid, brief and precise measure for research (Gosling et al., 2003), it is nevertheless very brief, containing only ten paired items. To validate the new measure as comprehensively as possible, a broader measure was sought resulting in the IPIP being used in this study. The IPIP was designed to reflect the Big Five personality dimensions (Goldberg et al., 2006). It contains fifty items – ten items for each of the five dimensions. Participants rate the items on a 5-point Likert scale ranging from 1 = very inaccurate, to 5 = very accurate. Items include "I feel comfortable around people" (Extraversion), "Insult people" (Agreeableness), "Pay attention to details" (Conscientiousness). The IPIP scale was scored by computing the average of a participant's responses.

The IPIP is a set of personality items designed originally by Goldberg (1999), and which has been added to continuously since 1996. The IPIP website offers a set of personality items that can be used by researchers, is in the public domain, and allows free access to personality items that might ordinarily be closed to researchers due to access costs of journal articles and expensive copyrighted personality inventories. The aim of developing IPIP was to provide clarity to the more usual single trait adjective questionnaires that were liable to different interpretations without explicit context. (Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger, & Gough, 2006). The IPIP contains short phrases rather than single trait descriptors including: "I am the life of the

party; I am always prepared; I get stressed out easily; I feel little concern for others; I don't talk a lot" (Goldberg, 1999).

The instructions given to participants are: "*Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Indicate for each statement whether it is 1. Very Inaccurate, 2. Moderately Inaccurate, 3. Neither Accurate nor Inaccurate, 4. Moderately Accurate, or 5. Very Accurate as a description".* The scale-construction procedure is fully outlined in Goldberg et al., (2006, p.87).

The IPIP "is intended to provide rapid access to measures of individual differences, all in the public domain, to be developed conjointly among scientists worldwide… it should serve as a forum for the dissemination of psychometric ideas and research findings." (http://ipip.ori.org/HistoryOfTheIPIP.htm). In addition, the IPIP attempts to address the lack of accessible broad-bandwidth personality inventories (i.e. MMPI, CPI, 16PF, and NEO-PI), which are often payment-only access and copyrighted by the test publishers.

8.15 Core Self Evaluations Scale (Judge, Erez, Bono, & Thoresen, 2003) (Appendix 8.8)

Core self-evaluations relate to a broad personality trait first coined by Judge, Locke, and Durham (1997), to explain a higher order trait concerned with "fundamental assessments that people make about their worthiness, competence and capabilities" (Judge, Bono, Erez, & Locke, 2005, p. 257). The core self-evaluation scale (CSES) contain four components related to personality; self-esteem, locus of control, generalised self-efficacy and neuroticism (Judge et al., 1997), all of which have been found to relate to job satisfaction (Judge, et al, 2000; Judge, Locke, Durham, & Kluger, 1998); motivation (Erez & Judge, 2001); leadership (Eisenberg, 2000) and job performance (Judge & Bono, 2001).

The Core Self-Evaluation Scale (CSES) is a 12-statement questionnaire measuring self-esteem, self-efficacy, neuroticism and locus of control, all of which have been found to correlate significantly with job satisfaction (Judge, Locke, & Durham, (1997). The "core self-evaluation is a basic, fundamental appraisal of one's worthiness, effectiveness and capability as a person" offering a useful measure of self-assessment at work and job satisfaction (Judge et al., 2003 p.304). The CSES has incremental validity over the FFM of personality, and has been shown to be a valid measure when investigating personality and performance (Judge, Erez, Bono, & Thoresen, 2003). The response scale in the CSES is a 5 point Likert scale ranging from 1 = Strongly Disagree, to 5 = Strongly Agree. Sample items include "I am confident I get the success I deserve in life", "Sometimes I feel depressed" "I complete tasks successfully".

8.16 The Dark Triad Scale (Paulhus & Williams, 2002) (Appendix 8.9)

The "Dark Triad" describes three personality traits that all have a somewhat malevolent connotation (Paulhus & Williams, 2002). The three traits are Machiavellianism, Narcissism and Psychopathy: Machiavellianism is concerned with social manipulation; Narcissism with excessive ego and selfish behaviour; and, Psychopathy with callous, impulsive and predatory behaviours (Paulhus & Williams, 2002; Book, Visser, & Volk, 2015), which even at sub-clinical levels are often highly correlated with harmful emotional, social and illegal behaviours (Furnham, Richards & Paulhus, 2013). Although often discussed as one construct, research has shown the Dark Triad to consist of quite different, if overlapping, constructs (Paulhus & William, 2002), which share several features such as "socially malevolent …tendencies towards self-promotion, emotional coldness, duplicity, and aggressiveness" (Paulhus & Williams, 2002, p.557), and which "cannot be considered equivalent" (Paulhus & William, 2002, p.559). The Dark Triad aspects are explained now. Machiavellianism is particularly related to workplace behaviour, and the successful manipulation of others has been found to correlate significantly with career success, (Book et al., 2015; Furnham et al., 2013). Psychopathy also relates to workplace success, as lacking empathy, self-restraint or conscience, there are few limitations to risk taking behaviours which are often rewarded in the business world, and where psychopaths achieve notable success in both business

and politics (Babiak & Hare, 2007).

Although psychopathy generally indicates maladaptive traits, certain aspects, such as fearlessness, dominance and boldness, are generally regarded as desirable leadership qualities, which helps explain why a recent study (Lillienfeld, Waldman, Landfield, Watts, Rubenzer, & Faschingbauer, 2012), found US Presidents to be so prominent on a list of psychopathic traits, and also explains how psychopathy is instrumental in achieving great political success (Lillienfeld et al., 2012). On the HDS measure for dark side traits (Hogan & Hogan, 2009), Boldness relates to Confidence, and it is not surprising that high levels of this personality difference would link to success at leadership levels. Bankers, for instance, are cited as being 'successful' psychopaths (Babiak & Hare, 2007), as the key to the success of a psychopath at work is that they have no conscience, can take risks without any self-doubt, and do not worry about the consequences of their actions.

Narcissists have high levels of self-confidence which manifests well at job interviews, and where they create positive impressions on others, (Babiak & Hare, 2007), though such individuals are likely to engage in counterproductive behaviours and cause conflict at work which can lead to derailment (Bushman & Baumeister, 1998; Penney & Spector, 2002), and over time a loss of trust from others (Hogan & Hogan, 2009). They also have a sense of entitlement, and like to get their own way, a failure of which can result in the classic 'narcissistic rage' (Kohut, 1972), when thwarted. Narcissists need to feel superior so seek status and control over others, and an early developed sense of entitlement will mean that they will see any infringement on that entitlement as a threat (Babiak & Hare, 2007; Ronson, 2011). The only Big Five trait contained within all three aspects of the Dark Triad was Disagreeableness and "thus, the root of their social destructiveness is disturbingly normal" (Paulhus & Williams, 2002, p. 561) implying that most people have the potential within them to display such traits, under certain conditions and within particular environments. Disagreeableness is also related to the dark side traits of personality (Hogan & Hogan, 2009), which will be discussed in Chapter 9.

The Short Dark Triad inventory (SD3) was developed in 2011 in order to provide a

more uniform, shorter, assessment of the three traits of the Dark Triad; Machiavellianism, Narcissism and Psychopathy (Paulhus & Jones, 2011). This short measure was designed from items which best described the dark triad constructs, with the aim to reduce the number to a manageable amount for a short measure, and to retain relevant "conceptual facets of each triad member" (Jones & Paulhus, 2014, p.30). 489 adults were recruited from Amazon's Mechanical Turk (MTurk) and asked to complete a 41-item questionnaire. Following statistical analysis, the result was a 27-item instrument (see Appendix 8.9). It is not a clinical test and as such not to be used for diagnosis. The test contains 27 statements and takes approximately 5 minutes to complete. It is in the public domain for research and educational purposes only.

8.17 GAH, GAL and the Dark Triad

Dark Triad traits have implications for how individuals perform at work, and this study considers how far the dark triad relates to GAH, GAL and performance. At the core of the Dark Triad personality traits is a lack of Agreeableness (Paulhus & Williams, 2002), one of the Big Five Factors of personality. Agreeableness is concerned with getting along with others, showing consideration, being able to compromise, and a general ability to work in co-operation with other people, referring to Adler's (1979) Social Interest. Recent research found that Agreeableness is a key component of engagement at work (Akhtar et al., 2015) as it facilitates good working relationships with colleagues, and a lack of it can lead to a manifestation of dark side behaviours (Akhtar et al., 2015).

In Chapter 6, analysis was conducted to design the new short measure which confirmed which aspects of the HPI and the MVPI comprised either GAH or GAL. GAH included Recognition, Power, Hedonism and Sociability, all of which indicate the potential for Dark Triad traits such as Narcissism, Machiavellianism and Psychopathy. Recognition, Power and Hedonism all relate to the Socioanalytic drive for status. A need for Recognition requires others to acknowledge, admire and pay homage in order to feel validated, and such needs carry the potential for great hurt, and loss of esteem, when recognition is not forthcoming, and results in the Narcissistic anger and rage (Kohut, 1972). GAL included Adjustment, Ambition, Sociability and Interpersonal Sensitivity. Adjustment is seen as a mediator of dark side behaviours as it indicates a level of self-

awareness in an individual of both themselves and others (Hogan & Hogan, 1997). It suggests stability and resilience in dealing with anxiety and pressure and high levels of Adjustment are thought to confer the ability to manage any potential dark side behaviours (Hogan & Hogan, 1997).

Both GAH and GAL include Sociability, which suggests that both are comfortable in social settings where they can engage with others, and that interactions with others in a work setting are important. Neither GAH nor GAL included Prudence (HPI), which is often referred to as Conscientiousness in the Big Five Model. This does not mean that Conscientiousness is not important for career success, but that when considering how people get ahead or get along, Conscientiousness does not demonstrate as a significant influencing factor. The theory underpinning the dark side of personality is that whichever 'bright side' traits are strongest in an individual are those most likely to manifest as 'dark sides' when under pressure (Hogan & Hogan, 2009). Given the potential for both GAH and GAL to display dark side as well as bright side behaviours, this validation study includes the Dark Triad questionnaire in order to investigate how far the Dark Triad relates to GAH and GAL and Performance.

8.18 Hypotheses

The following hypotheses will be tested:

H1. GAH/GAL will be positively correlated with the Big Five Factors (IPIP)
H1.1. GAH/GAL will be positively correlated with Extraversion
H.1.2. GAH/GAL will be positively correlated with Openness
H.1.3. GAH/GAL will be positively correlated with Agreeableness
H.1.4. GAH/GAL will be positively correlated with conscientiousness
H.1.5. GAH/GAL will be positively related with Emotional Stability
H2. Both GAH and GAL will be positively correlated with CSE
H3. GAH will be positively correlated with Dark Triad traits
H4. GAL will be negatively correlated with Dark Triad traits

H5. GAH/GAL offers incremental validity over the Big Five, CSE and Dark Triad in the prediction of Work Performance

8.19 Method

8.19.1 Participants

The study consisted of N = 304 adult workers (Females= 121, 39.8%; Males = 182, 59.9%, Missing =1, 0.3%). Ages were 18 to 74 years including: (18-24 years, 16.4%; 25-34 years, 49.3%; 35-44 years, 21.1%; 45-54 years, 8.6%; 55-64 years, 3.6%; 65-74 years 1%). Marital status was: Single 123 (40.5%); Married 141(46.4%); Divorced 10 (3.3%); Widowed 6 (2%); Living with a partner 23 (7.6%); Other 1 (.3%). The ethnicity of participants included: White British/White Other 129 (42.4%); Asian/Indian/ Pakistani 121 (39.8%); Black Caribbean 18 (59%); Chinese/Japanese/Korean 13 (4.3%); Asian British 4 (1.3%); South American 4 1.3%; Black British 1 .3% and Other 14 4.6%. Occupations included: Manual worker 28 (9.2%); Semi-skilled 31 (10.2%); Skilled 105 (34.5%); Supervisory 59 (19.4%); Managerial 65 (21.4%); Senior Management 13 (4.3%); and CEO 3 (1.0%). Educational levels were: Secondary school 30 (9.9%); Further Education, 47 (15.5%); University under-graduates 125 (41.1%); University post-graduates 67 (22.0%); MBA 26 (8.6%); MPhil/PhD 7 (2.3%); and Professional (LLM, CPsychol/CIPD) 2 (.7%). The annual income of the participants was: <£10,000, 75 (24.7%); £10-25,000, 78 (25.7%); £25-40,000, 74 (24.3%); £40-50,000, 39 (12.8%); £50-65,000 17 (5.6%); £65-80,000 8 (2.6%) and > £80,000 13 (4.3%).

8.19.2 Measures

Five measures were used in this study: the new GAH/GAL short measure; the International Personality Item Pool (IPIP); The Core Self Evaluation Questionnaire; The Dark Triad Questionnaire and Performance Outcomes designed for this research. Each is described below.

8.19.2.1 GAH & GAL short measure x 14 items (Appendix 8.1)

The 14-item instrument, whose development is fully explained in the previous chapter, was used to measure an individual's behaviours that helps them Get Ahead and Get Along. The two scales were found to have acceptable levels of internal consistency (GAH = .84; GAL = .77). The GAH and GAL scales were scored by computing the average of a participant's responses.

8.19.2.2 The International Personality Item Pool - IPIP (Goldberg, 1999; Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger, & Gough, 2006) (Appendix 8.7)

The IPIP scales were designed to measure constructs similar to those in existing personality inventories, and its validity is the correlation between the IPIP scale and the scale on which it was based (http://ipip.ori.org). Lim & Ployhart (2016) found comparisons between the IPIP and the NEO-V showed convergent and discriminant validity, which supported the construct validity of the IPIP. In addition, they found very small differences for race and gender (Lim & Ployhart, 2016). Cronbach's alpha for all of the IPIP scales range from .63 to .88 (Johnson, 2014). The reliability of all the IPIP scales are available on the IPIP website, as are the scoring keys for the measure. Alpha reliability coefficients, and statistics on the scales are also listed. Regarding the validity of the IPIP, Goldberg et al., (2006) state that many of the IPIP scales were designed to measure constructs similar to those in existing personality inventories, and "a primary form of validity is the correlation between the IPIP scale and the scale on which it was based" (www.ipi.ori.org). Validity studies are available on the IPIP website. The IPIP Web site contains a description of methods for constructing validity indices for IPIP scales, although "it does not provide a unique set of new general-purpose IPIP validity indices" (Goldberg et al., 2006, p.89).

8.19.2.3 The Core Self Evaluation Scale (Judge, Erez, Bono, & Thoresen, 2003) (Appendix 8.8)

Judge, Erez, Bono, & Thoresen (2003), developed 65 items based on the literature

relating to the core traits of CSE theory, and found that the test-retest reliability of the items was .81, and addressed the conditions required for the construct validity of the measure. (Judge et al., 2003). Research found that the 12 item CSES, with three items relating to each of the four factors, was reliable and valid (Judge, et al, 2003), and that the CSES was a valid measure for use in psychology research. The validity of the CSE measure found that three of the four core traits generalised across studies and "the average validity was identical p = .23 to the validity of Conscientiousness (p = .23; Barrick & Mount, 1991). Judge et al., (2005) found evidence to support the validity of the CSES.

8.19.2.4 The Dark Triad Questionnaire – The Short Dark Triad (SD3), (Jones & Paulhus, 2014) (see Appendix 8.9).

The Short Dark Triad (SD3) has a 5 point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. Three scales, one for each of Machiavellianism, Narcissism, and Psychopathy contain 9 item statements each (27 in total). Examples include "You should wait for the right time to get back at people", "I insist on getting the respect I deserve" and "People who mess with me always regret it". 5 items are reversed (see Appendix 8.9 for the Dark Triad measure and scoring scale). Cronbach's alphas for the SD3 subscales were .71, .77, and .80 for narcissism, Machiavellianism, and psychopathy respectively. The validities for the SD3 were .42, .34, and .57, for narcissism, Machiavellianism and psychopathy respectively (Paulhus & Jones, 2011), and several research studies show support for its reliability and validity (Ashton-James & Levordashka, 2013; Furnham, Richards, & Paulhus, 2013; Giammarco, Atkinson, Baughman, Veselka, & Vernon, 2013).

8.19.2.5 Performance Outcomes (see Table 8.1)

As previously described in Chapter 8, Part 1 above, a 14 item instrument was developed to measure for performance outcomes, which reflected GAH and GAL. The initial 59 performance items were reduced to 14 items resulting in a single factor (Cronbach's Alpha = .91) and which accounted for 42.81% of the variance (see Appendix 8.6).

8.19.3 Procedure

The 5 measures: GAH/GAL measure, IPIP, CSES, SD3 and Performance Outcomes, were hosted on an online survey site (Amazon Mechanical Turk), on 28 November 2014, where participants were required to read the Confidentiality and Ethics notice before proceeding. Participants needed to accept the terms and to knowingly give their consent to continue with the questionnaire. The GAH and GAL personality questionnaire required participants to answer fourteen questions relating to personality style at work, and were asked how far they agreed with each statement. Participants responded to a 5-point Likert scale with 1=low agreement, and 5=high agreement. The performance questionnaire contained fourteen questions relating to performance at work within the last year, and participants asked how far they agreed with the statements. For the CSE questionnaire 12 statements were presented and participants asked how satisfied they were with their work. The IPIP questionnaire had 50 statements and participants were asked to rate each item according to how far it accurately described them. The Dark Triad questionnaire contained 27 statements on how participants behaved when with others, and were asked to rate their agreement or disagreement with each item.

8.20 Results

8.20.1 Descriptive Statistics & Correlations

Descriptive statistics and bivariate correlations were conducted to ascertain the level of inter-correlations between demographics, the Big Five factors, Core Self Evaluations, the Dark Triad scale and GAH and GAL and Job Performance (see Table 8.5). The results show that Hypotheses H1.1 – H1.5 were supported, Hypothesis 2 was supported, Hypothesis 3 was supported, Hypothesis 4 was not supported, and Hypothesis 5 was partially supported. Further discussion of each is outlined in the Results section below.

The results show that GAH correlates with most of the Big Five, notably Extraversion and Openness, and with Conscientiousness and Agreeableness although there was no

correlation with Emotional Sensitivity. GAH showed significant positive correlation with all three facets of the Dark Triad, in order: Narcissism, Psychopathy and Machiavellianism. A significant positive correlation was found between GAH and CSE. GAL showed significant positive correlation with all the Big Five factors, the highest correlation with Agreeableness, reflecting the ability to co-operation with others, and to show sensitivity to them. GAL correlated positively to just one facet of the Dark Triad; Narcissism. There was a significant positive correlation with CSE. When GAH and GAL were considered as one unit, both constructs positively correlated with job performance, and a strong correlation was again found between GAH and GAL. These results provide support for H1, H2, H3 and partial support for H5. H4 was not supported. These results are discussed further below (Section 8.24). To test the remaining hypotheses, regression analyses were used. In order to confirm the previous chapter's findings, validation studies were conducted with these five measures using Hierarchical Multiple Regressions.

Table 8.5 *Bivariate Correlations & Descriptive Statistics between GAH, GAL, Job Performance, and the Big Five, Dark Triad and Core Self-Evaluations*

	GAH & GAL	GAH	GAL	Job Performance	M	SD	Alpha
Gender	.04	.04	.03	-.01	1.61	.50	—
Age	.04	.01	.05	.03	2.37	1.03	—
Occupation Level	.19**	.29**	.01	.31**	3.50	1.35	—
Education level	.15**	.28**	-.05	.27**	3.13	1.19	—
Extraversion	.39**	.43**	.22**	.42**	2.89	.57	.69
Agreeableness	.33**	.14*	.47**	.16**	3.44	.49	.63
Emotional Sensitivity	.16**	.04	.26**	0.02	3.20	.53	.62
Conscientiousness	.32**	.23**	.34**	.22**	3.39	.42	.40
Openness	.34**	.39**	.17**	.27**	3.28	.39	.33
Machiavellianism	.16**	.16**	.11	.05	3.27	.54	.35
Narcissism	.38**	.36**	.28**	.24**	3.24	.54	.30
Psychopathy	.08	.20**	-.10	.08	2.92	.77	.56
CSE	.39**	.30**	.38**	.44**	6.97	1.37	.82
GAH & GAL	—	.90**	.82**	.66**	3.73	.57	.84
GAH	.90**	—	.48**	.70**	3.51	.74	.82
GAL	.82**		—	.40**	3.95	.57	.74
Job Performance	—	—	—	—	3.38	.91	.90

Notes: N = 304. * Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed). The variable 'GAH and GAL' is a single factor solution. It is the average of all 14 items. It was computed given the high correlation between the two variables and the unrotated factor analysis revealed a single factor.

8.20.2 Hierarchical Regressions

Hierarchical regressions were conducted in order to explore the relationship between a set of independent variables (IV), and a dependent variable (DV). Following on from the correlational analysis above, hierarchical regressions allowed for further investigation into which variables were most likely to predict performance. Hierarchical regressions were chosen in order to enter predictors in line with the hypotheses, to determine which variables would be strongest predictors of performance (Tabachnick & Fidell, 2007).

In this case, the technique was used to explore the incremental validity of GAH and GAL in the prediction of Work Performance. To test the incremental validity of GAH/GAL over other personality measures, a hierarchical multiple regression technique was used. When predicting work performance scores, four models were specified:

Model 1: included participants' age and sex;
Model 2: included participants' age, sex and the Big Five scores;
Model 3: included participants' age and sex, the Big Five, the Dark Triad (Machiavellianism, Narcissism, Psychopathy) and CSE scores;
Model 4: included participants' age and sex, the Big five, the Dark Triad, CSE and GAH and GAL scores.

As in Part 1, a decision was taken to include age and sex in these regression analyses as both are related to performance, (Avolio, Waldman, & McDaniel 1990; Bowen, Swim & Jacobs, 2000; Green, Jegadeesh, & Tang, 2009; Hjort, 1997; Prenda & Stahl, 2001) and inclusion allows for control of their effect when establishing the validity of the measure.

As can be seen in Table 8.6 below Extraversion was the strongest predictor from the Big Five factors in predicting performance across all models, followed by Emotional Sensitivity. In Models 2 and 3, Agreeableness also predicted performance, but when GAH and GAL were included in Model 4, Agreeableness was no longer a significant predictor, and Emotional Sensitivity (Adjustment) became the strongest predictor of

performance in this model. Conscientiousness showed no relevance at all to work performance which is contrary to the general theory of the Big Five factors. When the Dark Triad was included (Model 3), Psychopathy was shown to significantly predict work performance ($\beta = .17$) and is in line with much of the research which shows that psychopaths often do well at work (Babiak & Hare, 2007). Both Models 3 and 4 found CSE to have a positive correlation with work performance, and Model 3 found CSE to the most significant predictor of performance. In Model 4, however, both GAH and GAL were added to the regressions. Extraversion and Emotional Sensitivity (relating to Adjustment) were significant, as was CSE, but the most significant predictor for work performance, over and above the Big Five, CSE, and the DT was GAH. GAL had no relationship to work performance in this model.

These results partially support H5 and demonstrate that GAH is the single most important factor in predicting performance, over and above the Big Five factors, CSE and the Dark Triad (12.014) although GAL shows no such relationship. This finding warrants further investigation as it goes against previous research, and future studies could replicate and extend this current study. Future studies would also consider why GAL had no relationship to work performance. These results are discussed below.

Table 8.6 *Hierarchical Regressions Predicting Work Performance*

	Job Performance							
Predictors	**Model 1**		**Model 2**		**Model 3**		**Model 4**	
	β	***t***	***β***	***t***	***β***	***t***	***β***	***t***
Gender	-.01	.179	.03	.608	.02	.467	-.01	.243
Age	.05	.899	-.04	.732	.01	.124	.01	.257
Extraversion			.44	6.739***	.35	5.268***	.11	2.03*
Agreeableness			.16	2.145*	.17	2.401*	.11	1.769
Emotional Sensitivity			.27	3.463***	.31	4.271***	.20	3.473***
Conscientiousness			.10	1.278	.06	.833	-.01	.092
Openness			.02	.257	-.02	.265	-.09	1.743
Machiavellianism					.01	.143	-.05	1.098
Narcissism					.00	.033	-.06	1.341
Psychopathy					.17	2.943***	.03	.539
Core-Self Evaluations					-.37	6.417***	-.28	6.064***
GAH							.59	12.014***
GAL							.08	1.482
df	2, 307		7, 302		11, 298		13, 296	
F	0.438		12.64***		13.58***		33.15***	
Adjusted R-Squared	-.004		.209		.309		.575	
R-Square Change	—		0.224		.107		.259	
F Change	—		12.21*		00.94*		19.57*	

***. Correlation is Significant at the < .001 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

8.21 Discussion

This second study sought to confirm the validity of the new measure against existing measures and, in addressing the utility of the new measure, to show incremental validity in assessing for performance outcomes. Validation was made against the IPIP, the CSE, the DRD and performance outcomes. While these results are similar to Part 1, the measure used here is the IPIP an extended measure of the Big Five Factors, rather than the TIPI, which is a shortened ten item measure. The results are discussed now.

H1. GAH/GAL will be positively correlated to the Big Five Factors (IPIP)

H1 was supported. The results show that GAH positively correlates with Extraversion, Openness, Conscientiousness and Agreeableness but does not correlate with Emotional Sensitivity as measured by the IPIP. GAL positively correlates with Extraversion, Openness, Agreeableness, Conscientiousness and Emotional Sensitivity. The following five sub-hypotheses: H1.1, H1.2, H1.3, H1.4 and H1.5, relating to the Big Five Factors of personality, are discussed together.

Both GAH and GAL were positively correlated with Extraversion. GAH correlated with Extraversion more strongly than GAL, and together, GAH/GAL correlated .39 confirming the strength of Extraversion when getting ahead as well as getting along with others. The correlations, however, are lower than earlier studies, and it is argued that the inclusion of the Dark Triad scales and CSE reduced loadings onto the Big Five factors in analysis. Both GAH and GAL were positively correlated with Openness and Agreeableness. GAL had a stronger correlation with Agreeableness than GAH, indicating individuals who get along with others are more likely to co-operate, be helpful, less likely to be abrasive and able to compromise, in line with theory discussed above. Both GAH and GAL were positively correlated with Conscientiousness; GAH and GAL indicating an ability to follow rules, be organised, dependable, self-disciplined, goal oriented and someone who is reliable and time conscious. In this study, only GAL correlated with Emotional Sensitivity. Getting along with others requires a management of one's own, as well as others, emotional states, and emotional stability is a key component of successful interpersonal relationships.

H2. Both GAH and GAL will be positively correlated to CSE

H2 was supported. GAH and GAL showed a positive correlation to CSE. This is expected, given that CSE significantly predicts job satisfaction, and is indicative of job performance (Judge, Locke, & Durham, 1997). GAL showed a stronger correlation than GAH, and a question to consider when using the CSE is whether it is merely another measure for emotional stability? Neuroticism, a key factor of personality (Eysenck, 1997) is "argued to be an indicator of core self-evaluations so it is relevant to ask whether core self-evaluations is simply another label for neuroticism" (Judge et al., 2003, p.28.). As this study also uses the new GAH/|GAL measure with a scale for Adjustment, it might be argued this is unnecessary duplication. Nevertheless, most measures of emotionality measure anxiety and stress, seen as originating from "their psychopathological origins" (Judge et al., 2003) and it is argued that the CSE is quite different in content to the HPI scale of Adjustment (Hogan & Roberts, 2001). Indeed, it is suggested that core self-evaluations might themselves be labelled as one construct, neuroticism, given the strong correlations to the core trait of neuroticism (Judge, et al, 2000; Judge & Bono, 2001). Future studies could consider which aspects of the CSE most correlated with GAH and GAL, rather than including CSE as one construct.

H3. GAH will be positively correlated to Dark Triad traits

H3 was supported. GAH positively correlated with Narcissism, Psychopathy and Machiavellianism. While the correlations for Psychopathy and Machiavellianism were low, they were significant. The correlation with Narcissism was strong reflecting the potential dark side of GAH. Narcissists tend to have high levels of self-belief and an expectation of entitlement (Kohut,1972). They do very well in interviews, and are influential in persuading people, through their confidence, that they can achieve high office (Hogan & Fico, 2011). Those who seek to get ahead at work will be driven by the Socioanalytic need of status, power and control (Hogan, 1987), and Narcissists will not only seek, but expect to achieve these, in their careers. Psychopathy and Machiavellianism also correlated with GAH, indicating someone who is not only driven to achieve status and control but who will manipulate in order to get ahead, and will, in

addition, be quite disregarding of other people, almost to the point of callousness (Kohut, 1972). This has potential implications for selection and development as seeking individuals with GAH qualities suggests they may also have dark side traits related to the DT.

H4. GAL will be negatively correlated to Dark Triad traits

H4 was not supported. GAL showed a negative correlation to Psychopathy but it was not significant, and a positive correlation to Machiavellianism, again not significant. GAL showed a significant positive correlation with Narcissism. Getting along with others requires a degree of conformity, and GAL correlated most highly with Agreeableness which might moderate any tendency to be callous with others. Having the ability to take others' perspectives into account should mitigate against manipulation and duplicity (Machiavellianism). Nevertheless, a correlation of GAL with Narcissism implies that those who seek to get along with others may do so because they expect others to like them, and to include them in activities (Hogan & Fico, 2011). Self-confidence and belief in oneself is attractive and a narcissistic aspect may allow such individuals to enter into work, and social relationships, with an expectance they will bring benefits to them. They may, however, see people as a means to an end, rather than as a means in themselves, and this too has implications for DT traits. GAH and GAL as one factor positively correlated to Narcissism (.38) and Machiavellianism (.16).

GAL includes Adjustment and Interpersonal Sensitivity, and a high level of Adjustment is usually seen as a positive in a personality profile (Chamorro-Premuzic, 2012; Hogan & Hogan, 2009; Judge & Kammeyer-Mueller, 2007). Given the relationship to Narcissism, however, this view needs consideration as recent research shows that those too high on Adjustment can manipulate others through being highly empathic (Kilduff, Chiaburu, Jochen, & Menges 2010). High Adjustment (> 95^{th} percentile on the HPI) indicates someone who lacks the ability to be self-critical (Raskin, Novacek, & Hogan, 1991), but has a highly attuned awareness of other people's emotions. Highly developed interpersonal skills, and high emotional sensitivity to others' emotions, also have a dark side. Skills in reading and understanding other peoples' emotions can be used against them and to the advantage of the manipulator (Kilduff, et al, 2010), and indicate

someone who is not only capable of, but extremely able to, manipulate other people very skillfully, and highly vigilant to other peoples' weaknesses. High GAL individuals may, in fact, get along so well as they see people as a means to an end in order to further their own career ambitions.

H5. GAH/GAL offers incremental validity over the Big Five, CSE and Dark Triad in the prediction of Work Performance

H5 was partially supported. GAH was shown to have significant incremental validity over the Big Five, CSE and the Dark Triad in the prediction of work performance. GAL did not predict work performance in this study. The results here confirm that GAH, but not GAL, has incremental validity over and above the CSE and the Dark Triad. The CSE scale is shown as a better predictor of work performance than GAL. That GAL has not been shown to have incremental validity is thought to be related, in part, to the inclusion of the CSE. The two scales contain opposing traits; where GAL has Emotional Sensitivity, CSE contains Neuroticism. GAH was found to be the strongest indicator of work performance, and is in line with the earlier results above, relating GAH to engagement. Before considering how this research develops further, a brief review of some of the limitations of the research in Parts 1 and 2 of this study are discussed below.

8.22 Limitations of Research

The limitations of the measures used for studies in parts 1 and 2, including the TIPI, UWES-9, the Dark Triad and performance outcomes are discussed now.

8.22.1 The TIPI: Researchers often use shorter measures as "the advantage and appeal is that briefer measures take less time to complete than lengthy personality inventories but still maintain adequate psychometric properties" (Jonason, Teicher, & Schmitt, 2011, p. 52). Although brief measures are more likely to suffer from measurement error than more lengthy inventories (Kline, 2000), it is argued that shorter measures "present a reasonable compromise between precision and efficiency" (Jonason et al., 2011, p.56).

The TIPI was designed for just such a purpose; to be a brief, precise and efficient measure while at the same time maintaining validity (Gosling et al., 2003). While some internal consistency is sacrificed when measuring the Big Five personality traits, overall the TIPI is reasonably valid and replicates many of the Big Five factors (Jonason et al., 2011). Researchers found that the TIPI has good psychometric properties and was useful as a short measure for research purposes (Jonason et al., 2011). An evaluation of eight short measures of the FFM showed that when just single-item measures were used, there was a significant decrease in validity but when two-item measures were used, there was enough improvement in measurement to justify using these, and that there was a reasonable trade off between brevity and psychometric performance (Credé, Harms, Niehorster, & Gaye-Valentine, 2012).

A recent study of the TIPI (Renau, Oberst, Gosling, Rusinol & Chamarro, 2013) tested for internal consistency, test-retest reliability, convergent, discriminant, and content validity, as well as self-observer correlations in order to test for validation when translating into different languages: Spanish and Catalan (Renau et al., 2013). This study found that the TIPI demonstrated sufficient psychometric properties and was worthwhile for use as a short, Five Factor personality measure for research. While it is acknowledged that there are some restrictions on using short measures in research, studies support such use of the TIPI given the psychometric properties in terms of consistency, reliability and validity. Nevertheless, the TIPI is limited in scope and to ensure the fullest range of the Big Five personality factors were included, the IPIP was added to the second study, which despite some limitations of its own, notably how far the IPIP scales relate to the Big Five Factors (Johnson, 2005), has been found to be a valid and reliable short measure of personality.

8.22.2 The UWES-9: The UWES-9 invites similar criticisms to the TIPI in that it is a short measure that might conceivably sacrifice psychometric properties in its construction, though there is a tension that is yet to be resolved, between narrowing the definition of engagement so far that it becomes of limited interest, and broadening it too wide so that it loses its distinctiveness (Schaufeli, 2014). The UWES has been adopted in over 86% of organisational engagement studies (Bailey, Madden, Alfes, & Fletcher, 2015). Research into how valid and reliable the UWES-9 is, as both a measure

in itself, and in how it performs across cultures, with data from 10 countries (N > 14,5000) found the UWES-9 to be valid, to have strong internal consistency and to have test-retest reliability, arguing that it demonstrates acceptable psychometric properties and can be used in research studies (Schaufeli et al., 2006).

Later studies conducted using Italian and Dutch versions of the UWES-9 showed strong factor variance, internal consistency for all three scales, and validity (Balducci, Fraccaroli & Schaufeli, 2010). A further study investigated the validity of the UWES across occupational groups and found that both the UWES-17 (long version) and the UWES-9 demonstrated good factorial invariance and acceptable internal consistencies (Nerstad, Richardsen, & Martinussen, 2010). Longitudinal studies found that the UWES-9 had good construct validity and could be recommended for research purposes (Seppälä, et al, 2009). The range of studies confirming the use of the UWES-9 as a valid and reliable measure seems to address any issues regarding its use as a short measure.

8.22.3 The Dark Triad: Despite having a negative reputation, the three aspects of the dark triad are often associated with success at work (Furnham, Trickey, & Hyde 2012) and the results in this study demonstrate support for H3 which is that GAH will be positively correlated with Dark Triad traits. While these personality traits might indicate problems for such individuals, recent research shows that 'toxic employees' generally seem to progress to higher levels in companies than those without such Dark Triad traits (Jonason, Slomski, & Partyka, 2012). That they are even hired is explained in part by the fact "that interviews are brief episodes to observe such characteristics where the darker sides of these individuals" are kept hidden (Jonason, et al., 2012, p.450). Generally, at interviews, "they embody many desirable traits like charm, leadership, assertiveness and impression management skills" (Jonason, Slomski & Partyka, 2012, p.449; Furnham, Trickey, & Hyde, 2012), which may not persist once they are in the organisation.

There is, additionally, the question of curvilinearity to consider which means that there is an optimum level of behaviour that someone with dark side traits can manifest, and are still able to flourish. Too little, and there is likely to be no impression made by

them, too much and the dark sides will manifest, leading to a dysfunctional style of working (Hogan & Hogan, 1997). Finally, males scored higher on all three subscales of the SD3, with moderate to large effect sizes (Jones & Paulhus, 2014) which has implications for using this in research studies, and where further consideration is required to analyse how this affects gender differences.

8.22.4 Work Performance Outcomes

Performance outcomes (or indicators) are the quantifiable measures by which organisational objectives can be judged to have been met by the employee. Performance outcomes are usually aligned to the strategic goals of both the individual and the organisation, and assessed by a variety of means including supervisor, peer assessment and/or self-assessment. An indication of successful performance will depend on what is important to each organisation and thus, performance indicators vary from one organisation to another.

Additionally, work has changed dramatically over the last 20 years with the advent of technology including email, Wi-Fi and Skype. This has resulted in millions of people either working from home, working while travelling in different countries, or working outside of the 'usual' work hours of 9-5pm. This new flexibility is regarded as an enhancement to working lives, as well as adding flexibility to organisational practices. It does, however, mean that many people may not have any observers of their working patterns or behaviours, limiting observer ratings or assessment by a supervisor. The growing emphasis on self-assessment particularly, in performance evaluations has been influenced by the changing nature of work, the growing number of unsupervised employees and the specialism of employees in areas often outside of supervisor's expertise (Heidemeier, 2005). Asking for self-ratings on performance, therefore, is becoming increasingly common and in certain fields of employment, the most common form of performance assessment (Heidemeier, 2005). Further, "with respect to the subjectivity of performance evaluations, this is the nature of virtually all performance criteria in organizational settings" (Judge et al., 2003, p.29) and much used in current research.

Self-evaluation is regarded as a key component of self-management in many areas of work now, and encompasses the capacity to self-regulate (Cervone, 2004). Despite some studies showing that some self-appraisal can be lenient in judgment (Harris & Schaubroeck, 1988), and less useful than those with supervisors and peers (Conway & Huffcutt, 1997), there is support as to their usefulness when clear criteria and objective measures are used particularly for research purposes (Heidemeier, 2005). Given this, it was decided to assess for performance using personal reports aligned to clear performance indicators. Personal reports in this study are considered low-stake: all responses were anonymous; no feedback was given; nor were there any consequences to the participants of completing this questionnaire; and as such, it is considered that there was no incentive to lie. It is assumed, therefore, that the data can be trusted.

8.22.5 Using Amazon Mechanical Turk (MTurk) for data collection

MTurk has gathered a voluntary pool of on-line participants who, for a small fee, offer to complete research questionnaires on line. Known as Amazon's Mechanical Turk (MTurk) it has, as of 2014, over 500,000 participants in 190 countries (Paolacci & Chandler, 2014) and offers a quick, inexpensive and extensive research tool for gathering data. It has been shown to be as reliable, and as valid, as the more usual laboratory style experiments (Johnson & Borden, 2012), and is increasingly used for researchers in the social sciences as a way of getting a large number of participants in shorter time frames. Social scientists have usually relied on time-consuming data collection methods, often involving recruiting participants and interviewing or giving questionnaires to complete. MTurk has been widely welcomed by social scientists in particular, whose main data collection is through people, as it offers a large pool of participants, at any time day or night, for very low cost (Paolacci & Chandler, 2014).

Despite the small payment fees, ranging from $0.5 cents to $2 a questionnaire, research shows that compensation has no influence on the reliability of data, though smaller amounts have been shown to affect the rate at which people complete forms. Participants are called 'Workers' and need to be aged 18 yrs and over. Incomplete data is rejected and the participant is not paid, so there is a real incentive for accuracy and completion of data collected (Johnson & Borden, 2012). This also impacts on Workers'

ratings which influences their access to fresh data collection, and is a motivator to maintain high standards in completion.

The advantage of using MTurk has been acknowledged in recent research projects in social psychology (Buhrmester, Kwang, & Gosling, 2011; Fishbach, Henderson, & Koo, 2011; Gomez, Brooks, Buhrmester, Vasquez, Jetten, & Swann, 2011), cognitive psychology (Eriksson &Simpson, 2012), political ideology (Clifford, Jewell, & Waggoner, 2015), and in linguistics (Sprouse, 2011), and whose studies found MTurk to be a reliable and valid tool for research purposes. Futhermore, MTurk has been found to be as reliable as laboratory experimental data (Buhrmester, Kwang, & Gosling, 2011), showing a high quality of responses to questions (Ramsey, Thompson, McKenzie, & Rosenbaum 2016) despite the lack of control over who participates in terms of demographics (Johnson & Borden, 2012), or political ideology (Clifford, et al, 2015).

Nevertheless, MTurk has garnered some criticisms over recent years. One is that of the low payment fees, suggesting that only very poor participants will take part, and thus skew the data (Cushing, 2013). However, research for the two studies in this chapter, shows that participants range from very low paid to extremely highly paid with some earning over $80,000+ per annum. It is possible that people enjoy completing these tests for their own sake. Money is not seen as a great motivator as the taking part itself, although research shows that in India for example, 90% of people do take part to earn money, though the differential in $ rates may make it more appealing in certain countries (Fort, Adda, Sagot, Mariani, & Couillault, 2014), and which is a consideration for future research regarding where the data is collected from.

Sampling concerns regarding MTurk participants include those of the quality of respondents who self-select to complete questionnaires (Goodman, Cryder, & Cheema, 2012). Attempts to address this include screening of participants prior to completion, which may result in preventing their inclusion in studies (Goodman et al., 2012). Other issues are those of cross-contamination where participants tell each other what to expect and how to answer, although this was found not to be a problem with MTurk (Goodman et al., 2012). Nevertheless, the nature of MTurk means that participants can apply to complete numerous questionnaires which, while not affecting cross-contamination

might affect the naivety of the subject matter, and is something to be considered for future studies.

Controlling cohorts for data collection by country is allowed via MTurk, but it was deemed an unnecessary restriction for these studies which was aiming to collect as wide a group of participants as possible. Concern also comes from its unregulated nature. There is no support, nor protection, for anyone completing questionnaires on MTurk, so that if participants are not accepted for studies, they are not given any feedback, and their rating affects their credit scores which impacts on future earning (Cushing, 2013). Generally, however, MTurk is acknowledged as being a useful on-line data gathering tool for social scientists despite the criticisms (Buhrmester, et al, 2011; Johnson & Borden, 2012; Ramsey, Thompson, McKenzie, & Rosenbaum 2016; and Sheppard et al., 2006) as well as an invaluable method of collecting large amounts of data for research purposes.

8.26 General Discussion of Chapter 8: Part 1 and Part 2

Chapter 8, parts 1 and 2, investigated the incremental validity of the new GAH/GAL measure against other measures. Results from Part 1, where the relationship between GAH and GAL with the Big Five and Work Engagement was investigated, found that GAH, but not GAL, significantly predicted job performance scores over and above the Big Five. The inclusion of engagement in the model found both GAH and engagement predict performance over and above the Big Five. Both GAH and GAL positively predicted engagement over and above the Big Five. The relationship between GAH, GAL and engagement has implications for selection, development and retention of employees. as the style of engagement is predicated upon individual differences resulting in measurable performance outcomes.

Much research shows the relationship of personality to performance but until this study, there has been little investigation into the relationship between personality, engagement and performance. Where engagement is related to personality and individual differences, it is suggested that far more useful selection data can be achieved and more

effective selection and development measures applied. A recent meta-study of 25 million responses found that engagement is often lacking in most organisations across the world, and reported that 70% of employees were not engaged at work (Gallup, 2015). As the results were only from organisations who had asked their employees how they felt about work, it clearly does not consider millions of people who had not been asked, and who may also be disengaged (Chamorro-Premuzic, 2015a). Results show that bad leadership and poor management often leads to low employee engagement, emphasizing the importance that leadership can have on engagement at work and which has such a detrimental effect on the individual, the team and the organisation (Chamorro-Premuzic, 2015b). This will be discussed further in Chapter 9.

Part 2 included a second validation study which investigated the relationship of GAH and GAL to the Big Five, CSE and the Dark Triad. The results show that GAH has incremental validity over and above these measures when predicting for work performance, and GAH correlates with the Big Five, with the exception of Emotional Sensitivity. GAH correlated with all three facets of the Dark Triad, in most significant order: Narcissism, Psychopathy and Machiavellianism. Given the relationship to the dark triad, and the drive to achieve success, it is not surprising that Emotional Sensitivity is not related to GAH. A significant positive correlation was found between GAH and CSE. GAH and engagement predicted job performance but GAL showed no relationships with performance in this study.

Results show that GAH correlated significantly with all three factors on the Dark Triad scale; Narcissism, Psychopathy and Machiavellianism and GAL correlated with Narcissism. Despite the general negative perceptions towards Dark Triad traits, their usefulness was discussed in terms of application in an organisational setting. The results have potential implications for what is termed the 'bright side' and the 'dark side' of personality, and for a selection process to be as effective as possible, both sides of personality need consideration. Indeed, recent research argues that more focused attention be given to what are termed 'maladaptive traits' in the workplace (Guenole, 2014), or 'dark side personality traits' (Hogan & Hogan, 2009). The impact on an organisation by dark side traits can be very damaging, and such behaviour can lead to management derailment, as well as organisational dysfunction (Furnham & Taylor,

2004; Hogan & Hogan, 1997; Guenole, 2014). Moreover, dark side traits in leaders has been found to lead to employee dis-engagement with the damaging consequences for individuals and organisation. A brief explanation of the dark side of personality will be outlined below, and a more comprehensive discussion given in Chapter 9 will which investigate how far GAH and GAL relate to the dark side of personality.

Given that GAH and GAL are derived from analysis of the HPI and the MVPI, both of which measure the 'bright side of personality' and individual values, the dark side would seem appropriate as a last study with which to validate the new measure. The dark side of personality contains those aspects of personality hidden from consciousness (Jung, 1951), but which usually emerge when our guards are down (tiredness, stress, over-familiarity, alcohol). It is these 'dark side' behaviours that underlie poor leadership and management and result in problems at work (Hogan & Hogan, 2009). The HDS is a measure for assessing dark sides of personality and was specifically designed as a non-clinical measurement for use in the workplace (Hogan & Hogan, 1997). Dark side, or 'maladaptive' behaviours, indicate traits that "predispose individuals to personality disorder amongst normal working populations" (Guenole, 2014, p.90) and which have implications for job performance.

The dark side of personality has negative implications for many areas of work performance including management derailment (Hogan, Raskin, & Fanzini, 1990), leadership (Conger, 1990; Hogan & Hogan, 2001), and productivity and performance (Moscoso & Salgado, 2004). Conger's study found "the very behaviours that distinguish leaders from other colleagues have the potential to produce disastrous outcomes for their organisation" (Conger, 1990). This view is confirmed by recent research on engagement, which found that 'engaging leaders' can facilitate and enhance team performance, resulting in profitable organizations, highly energized teams and committed individuals (Chamorro-Premuzic, 2015a). Moreover, employees who are disengaged often show counterproductive work behaviours themselves, including time wasting, being late, absenteeism up and stealing, which cost industry an estimated $450 million per year (Furnham & Taylor, 2004; Chamorro-Premuzic, 2015b).

This chapter has conducted further validation studies to confirm the validity of the new

measure, and to investigate incremental validity over other measures. The results show that both GAH and GAL positively correlated with job performance ($r > .66$); that GAH positively correlated with all aspects of the Dark Triad, in particularly with Narcissism reflecting the potential dark side of GAH. GAL also showed a significant positive correlation with Narcissism, lower than that of GAH, but also a high correlation with Agreeableness. As a lack of Agreeableness is seen as core to the manifestation of dark side behaviours (Paulhus & Williams, 2002), it is argued that this would moderate any potential dark side behaviours in GAL. GAH was shown to have predictive validity over the Big Five, CSE and the Dark Triad in the prediction of work performance, though GAL did not predict work performance in this study. The concept of work engagement on performance, and the dark side of personality have implications for how people perform at work. Engagement, while generally seen as relating to positive outcomes, has been shown to have potential dark sides to it, and the next chapter looks at the dark side of personality. It seems that the dark side of personality has both a positive and negative impact on work performance and therefore, Chapter 9 following will include one final validation study which investigates the incremental validity of the GAH and GAL against the HDS (Hogan & Hogan 1997).

Chapter 9: Study 6 – Measure Validation of the new GAH/GAL measure against the HPI and the HDS

9.1 Introduction

Chapter 8 extended the validation process for the new measure against existing measures, and investigated two key areas of personality and work performance: Part 1 investigated the relationship between personality, performance and engagement; Part 2 investigated the relationship between personality, engagement, the dark triad, and work performance. Part 1 found that both GAH and GAL positively correlated with engagement specifically when measuring for overall performance. The effects of this, and the dangers of too high a level of engagement were discussed, with its implications for workplace performance. Part 2 demonstrated that GAH and GAL correlated with the Dark Triad, and argued that while aspects of Narcissism, Machiavellianism and Psychopathy are generally damaging to an individual and those around them, dark triad traits are not always detrimental to an individual's career success. To consider these aspects together, and in respect of how GAH and GAL might indicate potential performance, this chapter is the third, and final, validation study which validates the new measure against the HPI and a measure of the dark side of personality, the HDS, including the performance measures used in Chapter 8.

9.2 Personality and Leadership

There is a growing body of research which has investigated how detrimental poor leadership is, for the individual, their employees, and the organisation (Guenole, 2014; Furnham & Taylor, 2004; Hogan & Hogan, 1997; Gallup, 2015; Chamorro-Premuzic, 2015a), and a recent study shows how leadership affects employee engagement in particular (Gallup, 2015). Leadership has a significant impact on engagement which

should be a cause of concern for organisations, given that 70% of employees, according to recent research, are not engaged at work (Gallup, 2015).

Recent research has argued for more focused study into what are termed variously as 'maladaptive traits' (Guenole, 2014), or the 'dark side of personality' (Hogan & Hogan, 1997). Such research, it is argued, would be helpful towards understanding the damage these traits can do in an organisational setting (Guenole, 2014), including areas of employee engagement (Furnham & Taylor, 2004; Hogan & Hogan, 1997; Guenole, 2014; Chamorro-Premuzic, 2015; Gallup, 2015), and leadership (Conger, 1990; Hogan, Raskin, & Fanzini, 1990; Chidester et al., 1991; Hogan & Hogan, 1997). Over the last 30 years, research on the dark side of personality has found negative implications for many areas of work performance including management derailment (Hogan, Raskin, & Fanzini, 1990), leadership (Conger, 1990; Hogan & Hogan, 2001), and productivity and performance (Moscoso & Salgado, 2004).

Conger's study found "the very behaviours that distinguish leaders from other colleagues have the potential to produce disastrous outcomes for their organisation" (Conger, 1990, p.44). This view is confirmed by recent research on engagement, which found that 'engaging leaders' can facilitate and enhance team performance, resulting in profitable organisations, highly energized teams and committed individuals (Chamorro-Premuzic, 2015a; Gallup, 2015). Conversely, employees who are disengaged can manifest counterproductive work behaviours, including time wasting, being late, absenteeism up and stealing, all of which cost industry an estimated $450 million per year (Furnham & Taylor, 2004; Chamorro-Premuzic, 2015a).

Nevertheless, as chapter 8 discussed, aspects of the dark triad traits such as narcissism, often correlate with success at work and it seems that the dark side of personality has both a positive and negative impact on work performance, as well as leadership styles, and in how people get ahead, and get along at work. This chapter focuses on the dark side of personality and the impact this can have on both the individual's career development, through their style of GAH or GAL with others, as well as the impact it can have on others working with such individuals. It will include a final empirical study to investigate the incremental validity of the GAH and GAL against the HPI and HDS

to assess for 'dark side traits' (Hogan & Hogan, 1997) and includes a measure of performance outcomes.

The aim of this final study is to investigate two key areas: how the dark side of personality relates to GAH and GAL; and, whether GAH/GAL has more incremental validity for assessing performance than either the HDS or the HPI in line with bandwidth fidelity theory. An explanation of the theory of the dark side of personality is given now.

9.3 The Dark Side of Personality

The 'dark side' of personality, according to Jung (1951), contains aspects of personality hidden from consciousness which tend to manifest when we feel threatened, or our guard is down (Hogan & Hogan, 1997; Jung, 1951). Interpersonal theorists such as Adler, Horney and Sullivan found that the way people react to others, particularly when anxious, is rooted in childhood development (Adler, 1927; Horney, 1950; Sullivan, 1953). Horney (1950) found that children learn to hide their hostility and anxiety with various defensive behaviours which she termed 'neurotic needs'. These manifested as flawed personality tendencies in adult relationships. Horney classified ten neurotic needs under three headings: i) moving away from other people; a need for independence; ii) moving against other people: a need for power; and, iii) moving towards other people: a need for love, summarised in Table 9.1. These three factors reflect the three clusters of the DSM-IV-TR (2000) shown in Table 9.2. below.

Table 9.1 *The overlapping themes from Horney's 3 clusters of neurotic needs and the DMS-IV-TR Axis 2 Personality Disorders*

Neurotic needs Theory: Horney (1942)		**DSM-IV-TR (2000)**
The neurotic need:	Interpersonal Response:	Psychological cluster:
Need to restrict one's life within narrow boundaries Need for self-sufficiency and independence	**Moving Away**	**Cluster A**: Schizotypal, Paranoid and Schizoid Personality Disorder. Such an individual is likely to experience poor relationships with others due to their odd, erratic, eccentric and unstable behaviour.
Need for power Need to exploit others Need for prestige Need for admiration Need for achievement	**Moving Against**	**Cluster B**: Borderline, Histrionic and Narcissistic Personality. Such an individual is likely to live in an intense, highly emotional state and to be dramatic, impulsive, promiscuous and often anti-social.
Need for Affection and approval The need for a partner who will take over one's life Need for perfection and unassailability	**Moving Towards**	**Cluster C**: Dependent and Obsessive-Compulsive Personality. Such an individual is likely to be anxious about order and control and pleasing authority.

In *moving away* from people, a person may withdraw, either emotionally or literally, from a stressful situation to defend themselves from anxiety, and can be seen as isolated and aloof by colleagues who sense the lack of engagement (Kets de Vries, 1989). In *moving against*, someone may respond by becoming aggressive, and display domineering traits as a response to anxiety and as an attempt to ward off threats (Horney, 1950). When *moving towards* others, a person may dissipate their own anxiety by placating the person who makes them feel anxious. They have learned to respond to threats by becoming more compliant and agreeable, and attempt to create an ordered

environment around them, thereby lessening any hostility towards themselves. These three styles relate to Neurotic, Narcissistic and Obsessive needs which Horney stated shape the adult personality (Horney, 1950). Jung proposed that children learn to suppress aspects of personality, what he termed their 'shadow' (1951), in order to alleviate the anxiety of not being accepted or valued. That is, if their dark side became apparent, they would be rejected.

Knowledge of how the dark side develops is key to understanding how it manifests in later life, and how it can have an impact at work. Early learned defensive styles are inappropriate as adults (Horney, 1937), particularly at work, and can often result in the manifestation of 'dark side' behaviours leading to management derailment (Hogan and Hogan, 1997; Widiger, Costa, & McCrae, 2001; Widiger et al., 2002). The manifestation of dark side behaviour is often detrimental to an individual's career and usually disastrous for organisations (see Kets De Vries, 1989; Conger, 1990; Hogan, Curphy, & Hogan, 1994; Babiak, 1995; Hogan & Hogan, 1997; & Furnham, 1998). As leaders are often in a position of influence and power over others, the dark side of leadership is a crucial factor in influencing performance at work and will be discussed now.

9.4 The Dark Side of Leadership

The personalities of leaders are considered fundamental in understanding why organisations fail or succeed (Kets de Vries & Miller, 1984). Personality characteristics such as moodiness, playing politics, being over controlling or dishonest, can lead directly to 'manager derailment', which occurs when managers fail in the role for which they have been promoted, either through lack of training or lack of good interpersonal skills (Bentz, 1985; Kets De Vries, 1989; Hogan, et al, 1994; Hogan & Hogan, 1997; Furnham, 1998). Research over the last 30 years has found that managers who 'derailed' were seen as arrogant, insensitive to others, over-ambitious, cold, over-controlling, selfish, unable to delegate or make decisions, and untrustworthy (McCall & Lombardo, 1983; Lombardo, Ruderman, & McCauley, 1988; Hazucha, 1991). Seemingly charming, friendly and enthusiastic managers who became manipulative, irrational,

impatient and volatile, were treated with suspicion and resentment (Conger, 1990), all of which had a disastrous effect on work colleagues and, in the long term, on organisational effectiveness and profits (Kets de Vries, 1989).

Recent research on dark side and maladaptive personality traits has found they have significant implications for organisations (Furnham, Hyde, & Trickey, 2013b; Guenole, 2014) including deviant behaviour (Furnham & Taylor, 2004) poor leadership (Hogan & Hogan 2001), and poor work performance (Furnham & Taylor, 2004; Hogan & Hogan, 2001; Moscoso & Salgado, 2004) all of which impact negatively on employee engagement both for the individual and their team. Although research found that certain aspects of the Dark Triad i.e. Narcissism, can boost career success, too many dark side behaviours, if left unmanaged, can result in management derailment (Bentz, 1985), producing what Conger (1990) called "disastrous outcomes" for the individual, their team, and the organisation (Conger, 1990, p.44).

There is a curvilinear relationship between dark side behaviours and performance, and the potential of the dark side of personality to be damaging needs to be considered in tandem with the fact that careers can be enhanced by dark side behaviours too. An example is confidence, useful for any senior role, but when over developed, risks becoming arrogant. This curvilinear relationship explains why dark triad traits enhance career success, up to a certain point, after which such traits are usually damaging. Therefore, an optimum of traits is required for effective performance, not a maximum (Hogan & Hogan, 1997).

Additionally, dark side behaviours can have a serious impact on job performance, and when expressed too frequently, particularly by those who have autonomy and control over others, such as senior managers and leaders (Furnham & Taylor, 2004; Judge, Le Pine & Rich, 2006; Khoo & Burch, 2008), can have serious implications for their subordinates (Hogan & Kaiser, 2005). Moreover, such behaviours are pervasive and subtle, and can create problems for the individual, their team and the organisation which impact on the effectiveness of employees and interfere with career success (Hogan & Hogan, 2009). Dark side behaviours can tarnish a person's reputation, as the individual becomes more known for their dark side behaviours than for their competence (Hogan

& Hogan, 2009), and this can affect how individuals get ahead, or get along with others at work. It seems appropriate that having discussed the dark side of engagement, and having utilized the dark triad measure for validation purposes, this research includes a measure of the dark side of personality. One psychometric test used to assess for potential dark side personality traits is the Hogan Development Survey (HDS; Hogan & Hogan, 1997), which is described below.

9.5 The Hogan Development Survey (HDS: Hogan & Hogan, 1997; 2009)

In times of stress, threat, when experiencing strong emotions, and when an individual's usual defences are weaker and less well managed, the 'dark side' of personality is likely to manifest (Horney, 1950; Jung, 1951; Hogan & Hogan, 1997). At such times, behaviours considered inappropriate for the situation or self-defeating for the individual, particularly in relation to their work, are more pronounced and demonstrated (Hogan & Hogan, 1997). The HDS (Hogan & Hogan, 1997; 2006) is a psychometrically designed personality questionnaire which measures dysfunctional interpersonal styles that interfere with the processes of leadership (Hogan & Hogan, 1997). The HDS taxonomy is closely related to the personality disorder classification of the DSM-IV-TR (American Psychiatric Association, 2000), but while there are many overlaps between the DSM-IV and the HDS, the HDS was specifically designed as a non-clinical measurement for use in the workplace, at the same time focussing on Jung's (1951) and Horney's (1945) theory as the 'dark side of personality'.

Developed as a way of predicting managerial incompetence, the eleven scales of the HDS cluster into three broad factors which typify the three styles of reacting to anxiety first proposed by Horney (1950): moving toward people; moving away from people; and moving against people; where all three dimensions form part of a 'toxic triangle' leading to destructive leadership (Padilla, Hogan, & Kaiser, 2007). The HDS has 11 scales which reflects aspects of the DSM (See Table 9.2 below). The 11 scales load directly onto the three factors outlined by Horney (1950): Moving Away (Excitable,

Skeptical, Cautious, Reserved & Leisurely); Moving Against (Bold, Mischievous, Colorful & Imaginative); and, Moving Towards (Diligent & Dutiful).

Table 9.2 *Overlapping themes of the HDS and the DSM-IV Axis 2*

DSM-IV Personality Disorders	**HDS themes**
Borderline: Inappropriate anger, unstable and intense relationships alternating between idealization and devaluation	*Excitable*: Moody, hard to please, intense but short-lived enthusiasm for people, projects or things
Paranoid: Distrustful and suspicious of others; motives are interpreted as malevolent	*Skeptical*: Cynical, distrustful, and doubting others' true intentions
Avoidant: Social inhibition, feelings of inadequacy and hypersensitivity to criticism or rejection	*Cautious*: Reluctant to take risks for fear of being rejected or negatively evaluated
Schizoid: Emotional coldness and detachment from social relationships; indifferent to praise and criticism	*Reserved*: Aloof, detached and uncommunicative; lacking interest in or awareness of the feelings of others
Passive-Aggressive: Passive resistance to social and occupational performance; irritated when asked to do something he/she does not want to do.	*Leisurely*: Independent; ignoring people's requests; becoming irritated or argumentative if they persist.
Narcissistic: Arrogant and haughty behaviors or attitudes; grandiose sense of self-importance and entitlement	*Bold:* Unusually self-confident; feelings of grandiosity and entitlement; over-evaluation of one's capabilities
Antisocial: Disregard for the truth; impulsivity and failure to plan; failure with confirm with social norms	*Mischievous:* Enjoying risk taking and testing the limits; needing excitement, manipulative, deceitful, cunning and exploitative
Histrionic: Excessive emotionality and attention seeking; self-dramatizing, theatrical and exaggerated emotional expression	*Colorful*: Expressive, animated and dramatic; wanting to be noticed and needing to the centre of attention
Schizotypal: Odd beliefs or magical thinking, behaviour or speech that is odd, eccentric or peculiar	*Imaginative*: Acting and thinking in creative and something odd or unusual ways
Obsessive-Compulsive: Preoccupation with orderliness, rules, perfectionism, and control, over-conscientious and inflexible	*Diligent*: Meticulous, precise and perfectionistic; inflexible about rules and procedures, critical of others performance
Dependent: Difficulty making everyday decisions without excessive advice and reassurance, difficulty expressing disagreement out of fear of loss of support or approval	*Dutiful*: Eager to please and reliant on others for support and guidance; reluctant to take independent action or to go against popular opinion

Adapted from The HDS Manual (Hogan & Hogan, 1997)

9.6 The Hogan Personality Inventory Survey (HPI: Hogan & Hogan, 1997)

Whereas the HDS reflects potential dark side behaviours, the HPI assesses normative personality traits, referred to as the 'bright side of personality' (see Chapter 5, Section 5.3.2.1. for details of the HPI). The HDS works in tandem with the HPI, as the HPI includes a measure of emotional stability (Adjustment), a trait seen to moderate dark side behaviours. Where Adjustment is high, there is much less likelihood of the dark side of personality becoming exaggerated, as it is expected there is sufficient self-awareness to manage any development of dark side traits.

The HPI demonstrated strong correlations with the NEO PI-R NEO PI-R (Goldberg, 1992; Goldberg, 2005), the Big- Five Markers (Hogan & Hogan, 2007), Personal Characteristics Inventory (Mount & Barrick, 2001), and the Inventario de Personalidad de Cinco Factores (Salgado & Moscoso, 1999), with coefficient ranges as follows: Adjustment/ Emotional Stability/Neuroticism (.66 to .72); Ambition/ Extraversion/ Surgency (.39 to .60); Sociability/Extraversion/ Surgency (.44 to .64); Interpersonal Sensitivity/Agreeableness (.37 to .61); Prudence/Conscientiousness (.36 to .59); Inquisitive/Openness/Intellect (.33 to .69); Learning Approach/Openness /Intellect (.24 to .35). The primary scales of each measure against HPI primary scales, showed good validity and reliability (Hogan & Hogan, 2007). There are no items concerning sexual preference, religious beliefs, criminal offenses, drug and alcohol incidents, or racial/ethnic attitudes. Finally, there are no items concerning physical or mental disabilities. The measure has also been found to predict job performance (Hogan, Rybicki, Motowidlo, & Borman, 1998).

The seven personality scales of the HPI with correlation coefficients are:

Adjustment: This trait represents Neuroticism (correlation coefficients range between .66 and .81; Hogan & Holland, 2003).

Ambition: This trait represents the leadership and status seeking qualities of Extraversion (correlation coefficients range between .39 and .60; Hogan & Holland, 2003).

Sociability: This trait measures the social interaction qualities of Extraversion (correlation coefficients range between .44 and .64; Hogan & Holland, 2003). The HPI features two traits that represent Extraversion, as according to ST (Hogan & Holland, 2003) an individual can be sociable but not ambitious (and vice-versa).

Interpersonal Sensitivity: This trait represents Agreeableness (correlation coefficients range between .22 and .61; Hogan & Holland, 2003).

Prudence: This trait represents Conscientiousness (correlation coefficients range between .36 and .59; Hogan & Holland, 2003).

Inquisitive: This trait reflects the imaginative and creative dimensions of Openness (correlation coefficients range between .33 and .69; Hogan & Holland, 2003).

Learning Approach: This trait measures the need for intellectual stimulation found within Openness (correlation coefficients range between .05 and .35; Hogan & Holland, 2003). The distinction for two traits that represent Openness within the HPI is justified for similar reasons as Ambition and Sociability. (Hogan & Hogan, HPI Manual 2006).

As discussed in Chapter 8 (8.5) the bandwidth-fidelity dilemma shows that it is less an argument of bandwidth vs. fidelity, but more related to the decision of when to use measures with narrow or broad bandwidth. The arguments for both are outlined in Chapter 8 and to briefly reiterate here, related to the aims of this study, narrow bandwidth with few items may seek specific and focusses measures of traits, but importantly miss out on individual differences (Ones & Viswesvaran, 1996) and they argue that for personality measures, broader personality traits are better for both prediction, and explanation (Ones & Viswesvaran, 1996). Further research has found that when measures which are narrow, but contextualized, (an example of which is the new GAH/GAL measure) and where the outcome criteria are clear, such as with performance outcomes, incremental validity is to be expected, over and above broad measures such as the FFM (Akhtar, et al, 2015; Hogan and Roberts, 1996; Tyler, 2014). Given this, it is expected that GAH/GAL will show incremental validity over and above the HPI and the HDS.

The implications of how leaders' dark side behaviours can impact on employee performance will be discussed, and a brief outline of how the three clusters of dark side

behaviours (Moving Against, Away and Towards, Table 9.1) would impact on GAH and GAL are given below.

9.7 GAH and GAL and the dark side clusters of Moving Against, Moving Away, Moving Towards

Moving Against

According to Horney (1942), moving *against* others is indicative of someone who likes to dominate others, to impose their will on others and to control events through their power and status. Due to a 'neurotic need' to be acknowledge and be in control, they manipulate and exploit others in order to gain advantage (Horney, 1942), and they use their skills in influencing others to attain this (Hogan & Hogan, 1997). Moving *against* people will use all their excellent social skills, charm, persuasiveness and ability to manipulate others, to get what they want.

The new measure of GAH comprises Recognition, Power, Hedonism and Sociability and is, therefore, expected to relate to the moving against cluster of the HDS (Bold, Mischievous, Colorful, Imaginative). GAH includes the scales of Hedonism and Sociability, both of which confer the ability to meet these needs in a social setting. Moving against profiles often gain a sense of value from what they own, and often use material wealth to impress, and to enhance their status in their social group, something Adler addressed in his theory of the inferiority complex (Adler, 1927). Horney (1942) found that moving *against* individuals need constant reassurance that they are well regarded, and it is this need for such reassurance that, when lacking, can enrage and result in what is often termed 'narcissistic rage' (Kohut, 1972). Overall, the desire to do well is a spur to hard work, but rather than enjoying their success, they seek also to demonstrate their superiority over others in the process, and can thus alienate other people. Horney (1942; 1945; 1950) found that an overdeveloped need for status, power and control can result in hostility and such individuals are often difficult for others to work with.

The new measure of GAL comprises Adjustment, Ambition, Interpersonal Sensitivity and Sociability. Such factors may not be expected to relate to the moving against cluster of the HDS (Bold, Mischievous, Colorful, Imaginative), and getting along with others does not usually suggest moving against them. However, high Adjustment and Interpersonal Sensitivity has been shown to be manipulative of others through employing a highly-attuned understanding of their emotions and when necessary, using this against them (Kilduff, et al, 2010). Ambition also indicates the potential to display dark side traits as a way of achieving personal goals. Sociability relates to being colourful and charming in a social setting and it is expected that GAL will relate to the cluster of moving against.

Moving Away

According to Horney (1942), the moving *away* cluster on HDS (Excitable, Skeptical, Cautious, Reserved, Leisurely), typifies people who fear criticism, harm or emotional abuse from others, and as children learned tactics to deal with this; they moved away from others either literally, or psychologically (Horney, 1942; 1945). They have an over-developed sense of independence as experience has taught them that relying on others is too risky for them. Independence for them comes at price as they fail to develop close relationships, the value of co-operation through mutual dependency and learning from mistakes. Usually moving *away* individuals feel they not worthy so do not push for much status or approval. They are reluctant to put themselves forward at work, and fear being made to feel small or lacking in any way. This inhibits their career as they tend to remain on the sidelines for fear of being ridiculed, and may be seen by others as cold and detached. They often lack emotional restraint and are prone to emotional outbursts and moodiness. GAH is not expected to relate to the moving *away* cluster.

GAL comprises Adjustment, which indicates emotional stability and the ability to manage one's own, and other people's emotional reactions. The moving away cluster includes Excitable, Skeptical, Cautious, Reserved, Leisurely, all of which are seen to relate to neuroticism on the DSM-IV-TR. The scales of the GAL measure are all indicative of someone who is not cautious or skeptical, not reserved or passive-

aggressive, and of someone who is socially competent and confident. The GAL, is therefore, not expected to relate to the moving away cluster.

Moving Towards

According to Horney (1942), the moving *towards* cluster on HDS (Dependent and Obsessive-Compulsive Personality) typifies individuals with a need to seek approval and love according. To manage their anxiety as children, they learned to affiliate themselves with those in authority and power and thus, as adults, seek to find protection from similar role models. They are quick to fit in with their superiors' needs, and often diminish their own needs in order to gain acceptance by those above them in rank. They seek people they can depend on and who they feel will protect them. To ensure they do not anger or alienate those in power, they do all they can to ensure excellent performance and can become obsessive in their work. Fear of being blamed drives this need which manifests as perfectionism. Their fear is loss of favour from those in authority.

The moving *towards* cluster contains two HDS scales (Dutiful and Dependent; Hogan & Hogan, 1997). The Dutiful scale includes perfectionistic tendencies, such as proving to one's boss that they are highly competent as a way of getting ahead. This scale is expected to correlate with GAH. The Dependent scale includes aspects of powerlessness, weakness and a need to attach oneself to someone in power for protection, and can manifest as being clingy and dependent. This scale is not expected to relate to GAH. The moving *towards* cluster is expected to relate to GAL. Being Dutiful and Dependent are ways of getting along with others. Generally, affiliating oneself with one's manager and demonstrating perfectionism at work is a way of pleasing those for whom one works. Getting along with others, as a means of achieving personal ambition, may include a need to attach oneself to someone in power for protection. This cluster is, therefore, expected to relate to GAL.

9.8 Hypotheses

H1. GAH will be positively correlated with the Moving Against cluster (Bold, Mischievous, Colorful, Imaginative)

H2. GAH will be negatively correlated with the Moving Away cluster (Excitable, Skeptical, Cautious, Reserved, Leisurely)

H3. GAH will be partially correlated with the Moving Towards cluster:

H3.1. GAH will be positively correlated with Diligent

H3.2. GAH will be negatively correlated with Dutiful

H4. GAL will be positively correlated with the Moving Against cluster (Bold, Mischievous, Colorful, Imaginative)

H5. GAL will be negatively correlated with the Moving Away cluster (Excitable, Skeptical, Cautious, Reserved, Leisurely)

H6. GAL will be positively correlated with the Moving Towards cluster (Dutiful, Dependent)

H7. In line with bandwidth theory which argues specific measures are better at predicting outcomes than broad measures, the GAH will have incremental validity over HDS and HPI in predicting performance at work

H8. GAL will have incremental validity over HDS and HPI in predicting performance at work

9.9 Methods

9.9.1 Participants

Data was collected for this study in November 2015. The study consisted of N = 248 adult workers: Females 125, (50.4%); Males 88 (35.5%); Missing 35 (14%). Missing data for gender is accounted for by the fact that this was an optional choice for participants, due to discriminatory legislation in USA. Ages 19 – 61 years (M = 32.6 years). All participants were based in the USA, and all worked for the same

organisation in the financial sector. All participants were within the same rank, which was not managerial level. Salaries and education levels were not available because they were not given to HAS by the client.

9.9.2 Measures

Four measures were used in this study: the new GAH/GAL short measure; the HPI; the HDS and Performance Outcomes.

9.9.2.1 GAH & GAL short measure x 14 items (see Table 7.4)

The 14-item instrument developed in the Chapter 7, and validated in studies in Chapter 8, was used to measure an individual's tendency to behave in a way that helps them Get Ahead (i.e. "I usually offer to present group projects", "Work is more fun if there is an element of competition", and "I prefer to manage my team than be managed"), and helps them to Get Along ("I try to calm things down whenever there is conflict between colleagues at work", "Taking the team out for a social event helps with team bonding", and "I gain personal satisfaction if people ask me for help"). The two scales were found to have acceptable levels of internal consistency (GAH = .84; GAL = .77).

9.9.2.2 Hogan Personality Inventory (HPI: Hogan & Hogan, 1997)

The HPI is a 206 'true/false' item self-report questionnaire containing seven primary scales. The inventory contains seven primary scales that align with the five-factor model (FFM) of personality (Digman, 1990; Goldberg, 1993; Wiggins, 1996). It is a robust and valid measurement of how we appear to others at work, as well as predicting occupational success (Hough & Furnham, 2003). The HPI has been used in many studies investigating workplace performance (see Landy, 1994; Hogan & Gerhold, 1995; Holland & Hogan 1999; McDaniel & Hogan 1997; Ross, Rybicki, & Hogan 1997; Rybicki, Brinkmeyer, & Hogan, 1997; Rybicki, & Hogan, 1996; Shelton, Holland, & Hogan, 2000). Internal consistencies for the HPI range from .71-.89, and test-retest coefficients of .74-.86, (Axford, 1996), Cronbach's Alpha for the HPI scales are:

Adjustment (.89), Ambition (.86), Sociability (.83), Prudence (.78), Inquisitive (.78) Learning Approach (.75) and Interpersonal Sensitivity (.71) (Hogan & Hogan, 1992).

9.9.2.3 The Hogan Development Survey (HDS: Hogan & Hogan, 1997)

The Hogan Development Survey (HDS: Hogan & Hogan, 1997, 2009) is a psychometrically designed personality questionnaire which measures potential dysfunctional interpersonal styles which interfere with the processes of leadership (Hogan & Hogan, 1997). The HDS taxonomy is closely related to the personality disorder classification of the DSM-IV-TR (American Psychiatric Association, 2000), but while there are many overlaps between the DSM-IV and the HDS, the HDS was specifically designed as a non-clinical measurement for use in the workplace, and seeks to identify dysfunctional behaviours that impair work performance. The HDS consists of 168 true/false items to assess for a variety of dysfunctional dispositions, in the form of statements to which respondents reply "agree" or "disagree". The scales reflect Horney's (1950) theory of three clusters: moving away, moving against and moving towards people. Participants are given instructions on how to complete and a code to access the test on line at HAS. The HDS takes approximately 15-20 minutes to complete on-line. The HDS has manual reporting internal reliabilities ranging between .50 and .79 and test-retest reliabilities between .58 and .87, and validity studies have been conducted on over 300,000 employees, in 50 organisations across a wide range of occupations (HAS). In addition, a comprehensive review was undertaken by the British Psychological Testing Centre (BPS Testing Centre, 2009) whcih showed the HDS to have good validity and reliability. The HPI and HDS scales were computed by totalling a participant's response for each scale.

9.9.2.4 Performance Measures

The performance measures are those used in Chapter 8. (see Table 8.1 for the Job Performance Indicators 14 items).

9.9.3 Procedure

After giving consent and being reassured that individual responses would remain confidential, all participants logged on to the Hogan Assessment Systems website (URL of login password) via a unique login password. The HPI and HDS were presented on the computer screen for participants to complete. Participants were also asked to complete the new short measure for GAH and GAL, as well as the performance outcomes designed for this research, all of which were presented at the same time. Participants were offered the opportunity to withdraw from the process at any time before testing began, as well as during the testing process. After completing the questionnaires, participants were given the opportunity to ask any further questions. Data was collected by HAS and it was explained that feedback would be given on the HPI and the HDS by HAS consultants in conjunction with their supervisors, as part of an employee development programme, and that their individual results would be archived for future research by HAS.

9.10 Results

9.10.1 Descriptive Statistics and Correlations

Descriptive statistics and bivariate correlations were conducted to ascertain the level of inter-correlations between demographics, the HPI, the HDS, GAH, GAL and Performance. Descriptive statistics and correlations are shown in Table 9.3 and Table 9.4 below.

H1. GAH will be positively correlated with the Moving Against cluster.
The results show that **H1** was supported; GAH was positively correlated with the four aspects (Colorful .74, Bold .72, Mischievous .60, Imaginative .51) of the Moving Against cluster.

H2. GAH will be negatively correlated with the Moving Away cluster.

H2 was partially supported. There were some relationships of GAH with the Moving Away Cluster, and results showed a significant negative correlation with Cautious -.16, and positive, albeit low, correlation with Leisurely, .26 and Skeptical, .20.

H3. GAH will be partially correlated with the Moving Towards cluster.

H3.1. GAH will be positively correlated with Diligent.

H3.2. GAH will be negatively correlated with Dutiful.

H3 was partially supported. H3.1 was supported, and GAH was positively correlated with Diligent .32. However, H.3.2 expected to find GAH negatively correlated with Dutiful, instead of which there was a positive, albeit low, correlation with Dutiful .21.

H4. GAL will be positively correlated with the Moving Against cluster.

The results show that **H4** was supported. GAL was positively correlated with all aspects of the Moving Against cluster (Colorful .59, Bold .58, Imaginative, .49, Mischievous, .47).

H5. GAL will be negatively correlated with the Moving Away cluster.

H5 was not supported. GAL showed no relationship to the aspects of the Moving Away cluster apart from a significant positive correlation to Leisurely .30.

H6. GAL will be positively correlated with the Moving Towards cluster.

Results found partial support for **H6**. GAL was positively correlated with Dutiful .58, but had no relationship with Diligent.

H7. GAH will have incremental validity over HDS and HPI in predicting performance at work.

H8. GAL will have incremental validity over HDS and HPI in predicting performance at work.

Both **H7** and **H8** showed a significant positive correlation with work performance, (GAH: .83, GAL, .80), which was investigated further through Hierarchical

Regressions. Regression analysis found that only GAH is a significant predictor of performance, so H7 was supported. H8 was not supported.

Table 9.3 *Bivariate Correlations & Descriptive statistics between demographics, HPI, GAH/GAL & Performance*

	1	2	3	4	5	6	7	8	9	10	11
1 Gender											
2 Age	.30**										
3 Adjustment	-.00	.07									
4 Ambition	-.02	.03	.85**								
5 Sociability	-.19**	-.12	.60**	.75**							
6 Interpersonal S.	.13*	.05	.82**	.78**	.73**						
7 Prudence	.21**	.08	.80**	.69**	.53**	.79**					
8 Inquisitive	-.14*	-.18**	.68**	.75**	.78**	.77**	.69**				
9 Learning A.	.08	-.08	.65**	.71**	.67**	.69**	.70**	.82**			
10 GAH	-.24**	-.10	.47**	.66**	.67**	.55**	.42**	.61**	.53**		
11 GAL	-.02	-.00	.56**	.60**	.60**	.69**	.61**	.66**	.58**	.81**	
12 Performance	-.06	.00	.57**	.68**	.60**	.62**	.53**	.63**	.56**	.83**	.80**

** Correlation is significant at the 0.01 level (2 tailed)
* Correlation is significant at the 0.05 level (2 tailed)

Table 9.4. *Bivariate Correlations Descriptive statistics between demographics, HDS, GAH/GAL Performance*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Gender	1														
2 Age	.30**														
3 Excitable	-.01	-.13*													
4 Skeptical	-.04	-.18**	.86**												
5 Cautious	.03	-.13	.73**	.66**											
6 Reserved	-.03	-.11	.75**	.75**	.72**										
7 Leisurely	-.06	-.10	.72**	.74**	.59**	.60**									
8 Bold	-.08	-.16*	.15*	.27**	-.13*	.10	.37**								
9 Mischievous	-.24**	-.22**	.38**	.42**	.12	.23**	.52**	.70**							
10 Colorful	-.16*	-.13	.21**	.25**	-.05	.04	.42**	.79**	.76**						
11 Imaginative.	-.12	-.21**	.17*	.30**	-.10	.11	.32**	.59**	.60**	.59**					
12 Diligent	.06	-.08	.36**	.46**	.28**	.41**	.42**	.55**	.32**	.33**	.39**				
13 Dutiful	.10	-.04	.48**	.48**	.49**	.37**	.40**	.29**	.31**	.30**	.20**	.53**			
14 GAH	-.24**	-.10	.13	.20**	-.16*	-.02	.26**	.72**	.60**	.74**	.51**	.32**	.21**		
15 GAL	-.02	-.00	.24**	.29**	.16*	.15*	.30**	.58**	.47**	.56**	.49**	.53**	.58**	.81**	
16 Perform.	-.06	.00	.04	.11	-.14*	-.06	.17**	.67**	.49**	.66**	.47**	.40**	.31**	.83**	.80**

** Correlation is significant at the 0.01 level (2 tailed)

* Correlation is significant at the 0.05 level (2 tailed)

In order to test the remaining hypotheses regression analyses were conducted.

9.10.2 Hierarchical regressions

Hierarchical regressions were conducted to explore the relationships between GAH, GAL the HPI, the HDS and Performance, and to investigate which variables were most likely to predict performance. A hierarchical multiple linear regression technique was used in order to explore the incremental validity of GAH and GAL over HPI and HDS for predicting work performance (see Table 9.5). A decision was taken to include age and sex, in these regression analyses, as in Chapter 8, as both are related to performance, (Avolio, Waldman, & McDaniel 1990; (Bowen, Swim & Jacobs, 2000; Green, Jegadeesh, & Tang, 2009; Hjort, 1997; Prenda & Stahl, 2001) and inclusion allows for control of their effect when establishing the validity of the measure. Four models were specified:

Model 1 included participant's age and sex:
Model 2 included participant's age, sex GAH and GAL:
Model 3 included participant's age, sex, GAH/GAL and HPI
Model 4 included participant's age, sex, GAH/GAL, HPI and the HDS.

As can be seen in Table 9.5, the most significant factor in predicting performance across all models is GAH. In Model 2, GAH accounts for 0.42 of the variance. Where HPI is included in Model 3 the variance is 0.52, though GAH is still the dominance predictor (t = 5.47**) and with both HPI and HDS, Model 4, the variance is just 0.54 (GAH t = 3.33**). GAH indicates a strong predictor of performance, over and above the HPI and the HDS and therefore, H7 is supported. GAL showed no incremental validity over HDS and HPI in predicting performance, and therefore H8 is not supported. Ambition and Inquisitive were also indicative of Performance in Model 3 (HPI), though adding HDS in Model 4 found Inquisitiveness and Colorful related to Performance, not Ambition. An unexpected result was that Model 4 found Sociability to be negatively related to Performance (-3.02) which does not accord with the literature. This may be due to high Sociability interfering with focus on performance, and warrants further research. There was a negative significant correlation with Reserved -2.65. These results will be discussed further below.

Table 9.5 *Hierarchical Multiple Regressions Predicting Job Performance*

Predictors	**Job Performance**							
	Model 1		Model 2		Model 3		Model 4	
	β	*t*	*β*	*t*	*β*	*t*	*β*	*t*
Gender	-.07	1.01	-.07	1.08	-.06	1.10	-.01	.09
Age	.03	.41	.05	.82	.10	1.76	.09	1.62
HPI Adjustment			-.23	2.30*	-.02	.17	.04	.34
HPI Ambition			.57	5.87***	.23	1.91*	.10	.84
HPI Sociability			.06	.67	-.27	2.66**	-.29	2.96***
HPI Interpersonal S.			.14	1.56*	-.01	.11	-.02	.18
HPI Prudence			.11	1.45	.15	1.57	.13	1.45
HPI Inquisitive			.18	2.42**	.27	3.31***	.22	2.87***
HPI Learn Approach			.00	.032	.01	.089	.00	.05
HDS Excitable					.13	1.10	.08	.73
HDS Skeptical					.07	.68	.05	.53
HDS Cautious					-.02	.21	-.01	.13
HDS Reserved					-.27	2.90***	-.25	2.69**
HDS Leisurely					-.08	1.03	-.07	.97
HDS Bold					.24	2.24**	.14	1.31
HDS Mischievous					.04	.38	.06	.63
HDS Colorful					.30	3.06***	.24	2.45**
HDS Imaginative					.03	.35	.03	.44
HDS Diligent					-.04	.51	.00	.022
HDS Dutiful					.40	.67	.04	.72
GAH							.32	3.60***
GAL							.01	.15
Adj R^2	-.00		.43		.51		.55	
Df	2, 20		9, 20		20, 19		22, 18	
F	0.52		19.17***		12.27***		12.88***	

9.11 DISCUSSION

This final empirical study sought to investigate how the dark side of personality relates to GAH and GAL, and to investigate whether the new measure for GAH/GAL has more incremental validity for assessing performance than the HDS and the HPI. The implications of how dark side behaviours in leaders can impact on employee performance have been discussed above, as well as how this can impact on individual employee engagement. The results of this final study will be briefly discussed here, before a comprehensive discussion of the whole thesis is conducted in Chapter 10.

H1. GAH will be positively correlated with the Moving Against cluster (Bold, Mischievous, Colorful, Imaginative).

H1 was supported. The results show that GAH positively correlated with all four aspects of the Moving Against cluster of the HDS: Colorful (.74); Bold (.72); Mischievous (.60); and Imaginative (.51). As the literature has shown, people who get ahead often demonstrate qualities such as confidence (Bold), charm (Mischievous), being able to express themselves and who like being the centre of attention (Colorful) and who have vision and ideas (Imaginative). That these correlate so strongly with GAH has implications for people in leadership position. The dark side of these qualities manifest as histrionic (Colorful), arrogant (Bold), manipulative (Mischievous) and eccentric (Imaginative) and a histrionic, arrogant, scheming manager with eccentric ideas may be not terribly appealing to most employees. When the dark side of personality is manifest too often at work, a leader will lose the support and trust of their team (Bentz 1985; Hogan, et al, 1994; Hogan & Hogan, 1997). Several factors of GAH are sought after in leaders (Hogan et al, 1994; Hogan, 2006), and knowing how the potential dark sides of a GAH profile might manifest at work, will enable for better initial selection, more focused development, and coaching for self-awareness for those already in an organisation.

H2. GAH will be negatively correlated with the Moving Away cluster (Excitable, Skeptical, Cautious, Reserved, Leisurely)**.**

H2 was partially supported. GAH showed a significant negative correlation with Cautious (-.16), and a positive correlation with Leisurely, (.26) and Skeptical, (.20). There was no correlation with Excitable or Reserved. These results indicate that the factors of the Moving Away cluster will have some influence on someone with a GAH profile. The negative correlation of Cautious confirms that someone who gets ahead will be driven to succeed, take risks and be open to new ideas, the very antithesis of someone who is too cautious. The low, positive, correlations of Leisurely and Skeptical indicate that elements of being these dark sides may be useful in a leadership role. Leisurely indicates someone who can easily ignore others when they need to, and can also avoid conflict when it suits them. Skeptical indicates someone with a cynical attitude to information which may also help from becoming too enthusiastic and caught up with new ideas. These both had very low correlations <.03 and therefore not likely to have much impact on a GAH profile but may be potential dark side traits.

H3. GAH will be partially correlated with the Moving Towards cluster.

Hypothesis 3.1. GAH will be positively correlated with Diligent.

Hypothesis 3.2. GAH will be negatively correlated with Dutiful.

H3 was partially supported: **H3.1** was supported, and GAH was positively correlated with Diligent .32; **H3.2** was not supported. It was expected to find GAH negatively correlated with Dutiful, instead of which there was a positive, albeit low, correlation with Dutiful .21. The positive correlation of Diligent is not surprising, and of the Moving Towards cluster traits, this one would be most likely to relate to GAH. Diligence relates to perfectionism and is indicative of someone who is not only meticulous and precise in their own behavior, but also of someone who can be inflexible about rules and procedures, critical of others' performance, and unable to delegate. Despite some useful aspects of Diligence, perfectionism can be detrimental to performance when over developed, and suggests someone who lacks confidence to delegate (Hogan & Hogan, 1997). The correlation with Dutiful indicates individuals that may be too eager to please their superiors, sometimes at the expense of their direct reports, and be reluctant to make moves which will impede their own career progression. Overdeveloped, Dutiful traits will manifest as dependency, a reluctance to make

difficult decisions, and 'sucking up' to supervisors, which would be detrimental to those who seek to GAH.

H4. GAL will be positively correlated with the Moving Against cluster (Bold, Mischievous, Colorful, Imaginative).

H4 was supported. The results show that GAL positively correlated with all four aspects of the Moving Against cluster of the HDS: Bold (.58); Colorful (.56); Imaginative (.49); and Mischievous (.47). The emphasis is slightly different from the GAH results which found stronger relationships with Colorful, Bold and Mischievous. Nevertheless, the strong correlations with GAL suggest that those who get along with others use similar personality traits if to a slightly lesser degree. The strengths of such traits have been discussed above, and the corresponding dark sides apply here, so that in getting along with others, being too confident (Bold), histrionic (Colorful) eccentric (Imaginative) or manipulative (Mischievous) too often, over time will result in a loss of trust in relationships, affecting how someone gets along with their colleagues. Because Ambition is part of GAL, they will be keen to achieve success at work and will use different traits to do so.

H5. GAL will be negatively correlated with the Moving Away cluster (Excitable, Skeptical, Cautious, Reserved, Leisurely).

H5 was not supported. GAL was expected to correlate negatively with the Moving Away cluster, as aspects of this cluster are detrimental to long term positive relationships. Excitable, particularly, has negative connotations with both career success and personal relationships as it relates to the DSM-IV scale of Neuroticism (American Psychiatric Association, 2000), and manifests through volatility, moodiness and irritability (Hogan & Hogan, 2009). GAL showed significant positive correlations with all aspects of the Moving Away cluster, albeit very low correlations. The only correlation >.30 was Leisurely (.30), though other positive correlations were, in order: Skeptical (.29); Excitable (.24); Cautious (.16); and Reserved (.15). Skeptical shows distrust of others, and of their intentions; Excitable is related to moodiness, anxiety, and over-enthusiasm resulting in disappointment. The two lowest correlations both <.02

were Cautious and Reserved, suggesting someone who fears being rejected by others and can be somewhat detached from others at work. Leisurely indicates someone who can be so focused at times they become irritated and ignore other people's requests. Given the low correlations, the only one that may impact noticeably on GAL would be Leisurely, which relates to a passive-aggressive response, and whereby others might feel ignored or rejected by the lack of response from someone with higher Leisurely scores. Conversely, if used appropriately, the Leisurely scale implies an ability to rise above issues, taking a more laid back approach, which might be useful in certain situations as a leader.

H6. GAL will be positively correlated with the Moving Towards cluster (Dutiful, Dependent).

H6 was supported. GAL was positively correlated with both Dutiful (.582) and Diligent (.53). These two scales of the HDS were expected to correlate with GAL, as getting along with others often suggests a compromise of one's own goals in order to affiliate with others, and affiliation is indicative of someone forming bonds, friendships and mutual dependency with colleagues, often senior to themselves, and conforming to the standards of their superiors which Dutiful and Diligent indicate.

H7. GAH will have incremental validity over HDS and HPI in predicting performance at work.

H7 was supported. GAH was found to have incremental validity over the HDS and HPI in predicting performance. In the HR Model 2, the HPI variable of Ambition was the strongest predictor of performance (5.87) with Inquisitiveness the second strongest predictor (2.42) which accounted for .43 of the variance. When the HDS was included in Model 3, Inquisitive (3.31), Colorful (3.06) and Bold (2.24) were the strongest positive correlations and Sociability (-2.26) and Reserved (-2.90) were the strongest negative correlations. Model 3 accounted for .51 of the variance. In Model 4, GAH accounted for .55 of the variance, and the results show that GAH is a stronger predictor

of Job Performance than either HPI or HDS. This is likely due to GAH containing elements of the MVPI, which includes values and needs such as a need for recognition and power. It could also be due to the bandwidth of the measure, and something for future research to consider.

H8. GAL will have incremental validity over HDS and HPI in predicting performance at work.

H8 was not supported. GAL was not found to have incremental validity over the HDS and HPI in predicting performance.

The correlations in this study of HPI, GAH/GAL and Performance (Table 9.3) as well as HDS, GAH/GAL and Performance (Table 9.4) all show some extremely high correlations and are discussed now. Unusually high correlations could affect the results of a study and if variables are too highly correlated, it has implications for validity. Table 9.3 shows high correlations with several scales and this is due to the HPI scales, which form part of GAH and GAL, correlating with aspects of themselves, such as Adjustment with Interpersonal Sensitivity. Given the scales of the HPI this would be expected and it might be a design problem rather than an intrinsic issue with validity. Looking for correlations between the HPI and GAH and GAL for instance, will indicate high correlations as both contain aspects of the HPI within them, and the larger the correlation the stronger the relationship between them. That GAH and GAL show such a high correlation with Performance (Table 9.3, .81 and .83 respectively) may have implications for the validity of the model, and how well it can predict performance.

The correlations in Table 9.4 referring to HDS, GAH/GAL and Performance found the HDS related to the three clusters as expected (Horney, 1942) i.e. Bold, Mischievous and Colorful all show high significant correlations with each other, as they all do with GAH, as predicted above. GAH and GAL, however, have the same correlations which suggests that these two higher order factors correlate significantly with performance, over and above the HPI or the HDS. Nevertheless, correlation does not necessarily imply that performance can be predicted by GAH or GAL but that the strength of these two higher order factors might influence performance. Certainly, these results suggest

the need for further studies to replicate, and expand, the investigations conducted here to confirm whether GAH and GAL are predictors of performance, as measured by the performance indicators above.

The limitations in this chapter relate to the methodology. Using a one-tailed test was an obvious option in this study as it would seem consistent with the hypotheses above, which indicate one direction for the result. However, a decision was made not to use a one-tailed test as it was not deemed appropriate for the study aims. The aim was to maximise the possibility of the research findings, and a two-tailed test can detect both positive and negative significant affects. It allows for the maximum possibilities rather than closing options down. A one-tailed test tests for the possibility of the relationship in one direction only, and it disregards the possibility of a relationship in the other direction. Using a two-tailed test for this study allowed for the testing of the relationship in both directions and results showed, for instance, that GAL did relate to the Dark Side traits, rather than as hypothesised. Further a one-tailed test risked getting false positives. Future research could consider using both one and two-tailed tests.

The sampling in this study is a limitation of the research in two ways. The data was collected by HAS using the HPI, HDS, the GAH/GAL measure and newly designed performance measures. Firstly, the participants were rather homogenous from the dataset, and from the same population, including the same organisation within one sector. Secondly, they were asked to participate as part of a development programme, in collaboration with their organisation and HAS. Ethically, participants are offered the chance to withdraw from completion of tests and to refuse to complete them if they so wish. When used within an organisational development programme however, there is little autonomy and it might be that the responses are not as authentic as they might be, leading to the possibility of an unrepresentative data sample. Furthermore, there is limited data on educational levels, salaries and ranks, which may have an impact on the findings.

9.12 Conclusion

GAH was found to be a strong indicator of work performance. While Ambition, part of GAL, was the strongest indicator initially, once other factors were entered GAH predicted job performance over and above Ambition. GAL showed no relationship with performance in the regressions. The reason for these results may be that GAL includes Interpersonal Sensitivity, closely related to Agreeableness. Research has found that being too pleasing at work can impede performance (Hogan & Holland, 2003), and can hold people back from making progress, and GAH. The dark side traits related to the Moving Away cluster showed no correlation with either GAH or GAL, although both GAH and GAL were found to be correlated with the Moving Against cluster, and this is related to Narcissism, which is discussed further in Chapter 10. The correlations in this chapter support earlier studies (see Chapter 7) that found similar relationships between GAH and GAL and the HPI. This study included the HDS to indicate which potential dark side traits might be having an impact on performance at work. Having investigated how far the Dark Triad relates to GAH and GAL, and how this impacts on work performance, this chapter sought to complete the exploration of personality differences of GAH and GAL by investigating the dark side of personality using the HDS.

This final validation study, in effect, brings the research around full circle and back to where it began. Having begun with the ST of (Hogan, 1976), and an investigation in the Hogan instruments using the HPI and the MVPI, this final study considered how the Hogan measure for the dark side of personality, the HDS would be validated against the new measure GAH/GAL. Adding the dark side of personality brought into the investigation those aspects represented by the dark triad seen as detrimental to workplace performance, and summarised by the three clusters of Moving Away, Moving Against and Moving Towards others. Chapter 10 will discuss the findings of the thesis and a consideration of the limitations, criticisms and applications of the research will be made.

Chapter 10: Discussion

10.1 Introduction

This chapter shows the progression of the research conducted in this thesis, from the exploration into the higher order factors of personality within the HPI and the MVPI, onto the development, and validation, of a new short measure for GAH and GAL. This current research has investigated how far the Hogan instruments measure ST with its three main drivers: GAH, GAL and FM. The criticisms, and limitations, of the research conducted in this thesis, will be discussed in this chapter, as will the implications of, and applications for, the research. This final chapter will draw together research from the six empirical studies in this thesis. This is the first time an investigation has been conducted into how the Hogan measures demonstrate ST in practical terms, and this thesis shows how a new short measure for GAH and GAL, arising from this research, was designed, developed and validated against other measures.

10.2 Research Development

The thesis began with an investigation into SI (Hogan, 1976), and an exploration into how far the HPI and the MVPI measure two key areas of personality: identity and reputation. Theoretically, this research advances the understanding of how personality differences impact at work, and is unique in that, for the first time, an investigation of the Hogan measures has been conducted which explores which aspects of each measure relate to GAH and GAL. A critical analysis of the HPI and the MVPI to examine these aspects has not been conducted previously, and this research attempts to address the gap in the lack of empirical evidence of how the scales map onto the two measures.

The three key aims of the research were: a) to test whether the three factors of ST – GAH, GAL or FM – would be found with the HPI and the MVPI; b) to find out which

scales of the HPI and the MVPI form GAH, GAL or FM; and c) to investigate how far GAH, GAL and FM could show incremental validity for performance over and above other measures. Chapters 1 – 4 of the thesis introduced the ST underpinning the HPI and the MVPI, including evolutionary psychology, psychoanalytic theory and symbolic interactionism, and explained how these related to identity and reputation. Previous research on investigations into higher order factors of personality was included to show how a precedent had been set in personality research, and how this new research builds upon that precedent. Chapter 5 outlined the first empirical investigation which conducted an analysis of the HPI and the MVPI measures to find three higher order factors: GAH, GAL and FM, of which only two were found. Chapter 6 sought to confirm the two higher order factors of GAH and GAL as well as to investigate how far they could predict job performance. Chapters 7 – 9 contained validation studies of the new short measure against other measures. The following section will consider these findings.

10.3 Getting Ahead, Getting Along …but no Meaning?

In Chapter 5, the three higher order factors which are argued to underpin ST, and which explain the need for acceptance, status and purpose (Hogan, 1976; 1982) were investigated: GAH, GAL and FM. While there was clear support for two higher orders factors: GAH and GAL, analysis did not find any evidence for the third, FM. ST argues that finding meaning is a key driver for individuals, and it seemed at odds with earlier research not to find this. It is thought that FM is likely subsumed within the two higher order factors of GAH and GAL, which contain scales from both HPI and the MVPI. The HPI measures reputation, the external view, and is not likely to reflect meanings and values to observers as clearly as identity, measured by the MVPI. That FM was missing is discussed now.

A search for meaning, according to Hogan (1976), comes from our attempt to create order out of random chaos. According to Frankl (2006), however, this search for meaning is fundamental to being human, and is the most important driver to individual action. Frankl (2006) argued that our innate need to make sense of the world drives us

to search for meaning and purpose as a way of validating our existence. Nevertheless, despite being such an overwhelming innate need, Frankl (2006) cautioned that certain factors could impede this drive, such as having too much ambition, comfort, affluence, materialism and thinking only of one's own enjoyment, all of which he saw as numbing, and destroying, the need to seek out a purpose (Frankl, 2006). Given the scales of the MVPI, there was an expectation that a higher order factor of FM would include Altruism, where individuals seek meaning through the good they do for others, and to help make the world a better place, but Altruism was not found in a third, higher order of FM.

Although the data suggests that a higher order factor of FM is not supported, this is not to say that a sense of purpose is absent from how people work, and engage, with others at work. It is likely that the way that people find meaning is absorbed into the other scales of the Hogan measures, as discussed above. This is an area that could be developed in any future research, given that FM is a key component of ST, and a consideration be given to include other measures which might capture meaning more readily. The implications of this led to further studies in Chapters 6 and 7, where a new short measure was developed. This is discussed below.

10.4 Development of a new short measure for GAH and GAL

The development of the new measure for GAH and GAL described in Chapters 6 and 7 included CFA and SEM to confirm the structure of GAH and GAL. SEM confirmed the higher order structure of the HPI and the MVPI, and showed that GAH included Recognition, Power, Sociability and Hedonism, and GAL included Adjustment, Ambition, Interpersonal Sensitivity and Sociability. How these results impact on an individual GAH and/or GAL is discussed now.

10.5 GAH – The factors of Recognition, Power, Sociability and Hedonism and how they influence GAH

Recognition, Power, Sociability and Hedonism loaded onto GAH as expected. The strengths of these factors indicate someone who is highly driven to succeed, someone who seeks status and control and someone who is Extravert, Sociable and Hedonistic. In Chapter 9 the possibility of dark side behaviours manifesting was discussed, and how the GAH factors relate to the narcissistic personality traits of the dark triad, as well as to the arrogant and manipulative scales of the HDS. That someone who is driven by a need to be recognised (.74), the highest scale on the GAH factor, may indicate less that someone is self-confident with a healthy self-esteem, and rather of someone who lacks a sense of self-worth. Rather than a drive to achieve great goals, or a sense of purpose to change things, the need to be recognised is indicative *per se* of the narcissist, and low self-esteem, suggesting that only when others acknowledge them do they matter. This need for recognition maps onto the need for admiration, hence the drive for status. Status would compel others to recognise such individuals, and thus, their overwhelming need for admiration is validated.

Nevertheless, a need for recognition is a drive which compels people to achieve and can spur someone towards greater performance. Recognition, coupled with the need for Power and Hedonism, suggests the potential for dark side behaviours to emerge, and one which organisations could heed, if knowing this in advance through a GAH/GAL measure. Hedonism is a scale on the MVPI relating to values and motives and includes enjoying the good life: food, drink, sex, holidays and a general seeking of pleasurable experiences. Depending on how strong this need is will determine how far someone strives to achieve pleasure for its own sake, or whether it is moderated by other considerations. Certainly, the need for recognition as well as the striving for pleasure could be problematic for such an individual who, though fun to work for, might be a potential risk for the organisation. Sociability, forming part of both GAH and GAL, will be discussed below.

10.6 GAL: The factors of Adjustment, Ambition, Interpersonal Sensitivity and Sociability and how they influence GAL

Adjustment, Ambition, Interpersonal Sensitivity and Sociability loaded onto GAL. Adjustment was initially expected to form part of both GAH and GAL, based on previous research (see Hogan & Holland, 2003). In this study, however, Adjustment was found to be a key factor of GAL but not of GAH. Ambition was expected to load on to GAH, although results found it loaded onto GAL. The strengths of GAL indicate someone who is well balanced, empathic, easy to work with, considerate of colleagues and charming. Ambition was a surprise, and it is argued that the strengths of GAL might in fact be useful in achieving the ambitious goals of such an individual.

In Chapter 9 the possibility of dark side behaviours manifesting were discussed, and the GAL factors have been shown to relate to the Machiavellian personality traits of the dark triad, as well as to the Manipulative scales of the HDS. GAL also contains Adjustment, which influences how the dark side of personality manifests. Research has long argued that Adjustment, (aka emotional stability) impacts significantly on how others see us, how well we succeed at work and how well we get on with other people (Barrick & Mount, 2005; Hogan & Hogan, 2009; Hogan & Ones, 1997; Kets de Vries, 1989; Mansi, 2002; 2007; 2008; Judge et al., 2002; Furnham & Heaven, 1999; Judge & Kammeyer-Mueller, 2007; Van den Berg & Feij, 1993). It was also argued that the need to get ahead was dependent upon getting along with others, and Adjustment would facilitate this. Adjustment, however, was negatively correlated with the higher order factor of GAH indicating that Adjustment may be counterproductive to someone who is driven to achieve. This is unlikely, given the wealth of research data showing emotional stability to be positively related to so many workplace outcomes, although cases of obsessive behaviour, indicating a lack of Adjustment, are often cited to show work success, and might include such cases as Steve Jobs of Apple, and Bill Gates of Microsoft (Maccoby, 2001).

One argument for Adjustment not forming part of GAH may be that empathy, a sub-scale of Adjustment (Hogan & Hogan, 1997), may mitigate against getting ahead of others at work. Adjustment also contains low anxiety and trust, all of which facilitate

an emotional identification with others, and the ability to find social interactions easy. Adjustment was the highest loading factor in GAL, and it may be that it is social skills, rather than emotional adjustment, which are key to achieving either good relationships with others, and to attaining personal goals which have meaning, and which manifest because of personality characteristics within the GAL and GAH profiles.

Adler argued that social interest in others contributed to the emotional adjustment of the individual and it is this interest in others that feeds into healthy relationships (Crandall, 1981). The sub-scales of Adjustment include the tendency to irritability, anxiety, regret and moodiness, all traits which relate to the self, rather than to others. While not necessarily pleasant to deal with, they can be masked by good social skills. and it may be that it is Interpersonal Skills that are the key to getting along, not necessarily Adjustment. Interpersonal skills relate to consideration of others, and sub-scales include being tolerant, easygoing, kind, considerate, tactful, appreciative and caring, all of which map onto the concept of 'Social Interest' advanced by Adler (1979).

While there are two distinct scales in the new measure, each works in tandem and an overall understanding of how individuals will predominantly get ahead, or get along, will be achieved when using all the new scales in one measure (see Table 10.1 for the final measure). Thus, while an individual may score more highly on GAH aspects, the results may also include Adjustment from the GAL scale, and be included in the final score on the new short measure. To succeed, one needs aspects of both GAH and GAL, and a summary of what these different profiles would look like was shown in Figure 7.2 (Working Style Preferences) in Chapter 7. Figure 7.2 shows a quadrant of how High GAH/Low GAH coupled with either High GAL/Low GAL would most likely manifest and how this might impact on career success. The possible combinations show that individuals with:

> **Low GAH and High GAL** – such individuals would be very pleasant to work with, most likely team players, would be agreeable, co-operative, calm and flexible in their attitude to their colleagues, low on conflict but also low on ambition, with little drive to succeed or achieve positions of power.

Low GAH and Low GAL – such individuals rarely make much impact, lacking the drive and ambition to achieve status or position. They show no desire to lead, and coupled with low GAL, will not be very pleasant to work with, will lack co-operation and team sensitivity, and may foster poor group relationships resulting in high levels of conflict. Generally individuals with Low GAH and Low GAL would be seen as 'dead wood' for most organisations, who perceive an employee not engaged with either the job or their colleagues.

High GAH and Low GAL – such individuals are usually highly driven, highly ambitious, ruthless almost, and keen to achieve positions of power, status and control. Their need for GAH overrides any need for GAL and they often do not foster good working relationships with others. A lack of consideration for others, or as Adler called it, social interest, will in time alienate colleagues who see someone interested only in their own self-interest.

High GAH and High GAL – such individuals are not only pleasant to work with, but they enjoy working with others. Their ability to co-operate, compromise, and treat others with sensitivity and respect, engenders good team cohesion and group dynamics. GAL indicates high sensitivity to others so they would most likely be rewarding for others to work for, as well as with. High GAH indicates an ambitious, driven, self-motivated, and high achieving individual motivated to make a mark through status power and control, and enjoy the rewards that brings, but also manages to work with people in doing so.

Future research would be designed to collect a larger dataset from working samples, which could be used to create reliable percentiles and cut-off scores. This would allow for the development of scales for the GAH and GAL measure, and indicate high/low scores of each.

10.7 A discussion on Ambition, Interpersonal Sensitivity, Prudence and Sociability

10.7.1 Ambition

Some of the factor loadings were unexpected and need further discussion here. For instance, Ambition was expected to load onto GAH, but in both the MLE and SEM analysis, Ambition loaded onto GAL. In Hogan and Holland's (2003) research GAH was predicted by Ambition, Adjustment and Prudence. In this research, neither Adjustment, Ambition nor Prudence formed a part of GAH. Analysis in this thesis, however, included the MVPI whereas Hogan and Holland's (2003) study only included the HPI and the results, therefore, were quite different. This research study showed that GAH contained elements of values and motives including Recognition, Power, Hedonism (MVPI) and Sociability (HPI). These reflect innate needs often related to finding meaning, and as has been discussed, the FM factor has seemingly been absorbed into the HPI and MVPI analysis. Elements of finding meaning appear to be greater drivers to getting ahead than Ambition. Indeed, many great entrepreneurs and creative thinkers throughout history have acknowledged their need to make sense of the world, and it is this that has driven them to achieve, and create a sense of purpose in their lives (Maccoby, 2001). When adding MVPI to the analysis, Ambition as a main driver to GAH loses it influence.

10.7.2 Interpersonal Sensitivity

Interpersonal Sensitivity, in the higher order factor of GAL, is related to the Big Five factor of Agreeableness, and reflects how socially skilled, how pleasant to work with, and how tactful and perceptive an individual is. Interpersonal Sensitivity eases social interaction, enhances compromise and facilitates co-operation with colleagues at work (Hogan & Chamorro-Premuzic, 2015a). Too high a level of Agreeableness, however, is likely to impede one's own advancement and career goals. Agreeable individuals may be seen as lacking the ability needed for leadership roles, and research shows that Agreeableness has been found to be counterproductive for those who want to get ahead in their careers (Hogan & Holland, 2003). Further, it does not predict status for either

women or men (Hogan, 1982; Anderson, John, Keltner, & Kring, 2001). The scale is associated with high quality, and pleasant, social interactions but not with work performance (Hogan & Hogan, 1997) and thus explains the lower variance of GAL with performance, leadership and career success. GAH includes Recognition and Power, implying less consideration of others than GAL, and it may be the lack of a sensitivity to others that facilitates leadership roles, where too high a level of empathy impedes. It is worth noting, however, that "the Agreeableness scale on the NEO-PI and the Interpersonal Sensitivity scale on the HPI correlate about .6 (Hogan & Hogan, 1997) and do not predict the same outcomes: the NEO Agreeableness scale concerns not giving offense, whereas the HPI Interpersonal Sensitivity scale concerns being charming" (Hogan & Chamorro-Premuzic, 2015a, p.14).

10.7.3 Prudence

Hogan and Holland (2003) predicted that GAL would include emotional stability (Adjustment), Conscientiousness (Prudence) and Agreeableness (Interpersonal skills). In this study, GAL included Adjustment and Interpersonal Skills but not Prudence. Prudence includes self-control, how far someone will stick to rules and conventions, hard work, and prefers predictability (Hogan & Hogan, 1997). Initial bivariate correlations between HPI and MVPI (6.3.1) show Prudence has a significant negative correlation with Sociability. Both GAH and GAL contain Sociability which facilitates the ability to feel comfortable in a social setting, engage easily with others and take the initiative in social situations. That Prudence is not found within either GAH or GAL suggests that the influence of Sociability is greater than that of a need to be too conscientious in social situations. Additionally, being too rule-bound and conventional may mitigate against social interactions and impede someone from getting along or getting ahead. In initial analysis, Prudence loaded onto GAL (.51) but this disappeared after SEM analysis, which suggests the factor would form part of GAL in an expanded measure. This is discussed further in Section 10.8. There is also the argument that Conscientiousness as a higher order factor has been exaggerated, and its impact on performance overrated with different instruments measuring different aspects of personality (Hogan & Hogan, 2007; Roberts, Chernyshenko, Stark, & Goldberg, 2005). If high scores on Conscientiousness correlate with inflexibility, rigidity, intolerance of

ambiguity and compulsivity (Hogan & Hogan, 2007), then it is not surprising that it does not load onto GAH or GAL.

10.7.4 Sociability

Sociability loaded onto both GAH and GAL, confirming the underlying theory that to get ahead, and to get along, we need to show 'social interest' in others (Adler, 1979), as well as sensitivity and flexibility in social settings, all of which manifests through the ability to adapt our behaviour accordingly (Hogan, 1976; McAdams, 1997; Mead, 1934). It is argued that it is our interest in other people which, when integrated with our personality traits and social interactions, enable us to achieve our goals (Hogan, 1976; 1982). Sociability relates to Extraversion on the Big Five Factors and it was shown that the high correlation between GAH and GAL was due to the overlap of extravert traits, where in the final measure, Sociability correlated GAH .69 and GAL .30. Extraverts are able to socialise easily in most social situations, so those with scores on both GAH and GAL will utilise this aspect of their personality in a social setting in order to achieve their goals, build good relationships with others and develop a positive reputation in the process.

10.8 Validation Studies of the new measure

Having confirmed the two higher order factors of GAH and GAL (Chapter 6), and explained the development process including the verification of item statements by external assessors, (Chapter 7), further studies were required in order to test for the validity of the new measure. Validation of the new measure was undertaken in three separate empirical studies in Chapter 8 (Part 1 and 2) and Chapter 9: one study tested against the Big Five, CSE and the Dark Triad; one study against the Big Five and engagement (UWES); and, one study with the Dark Side of Personality. Validation was conducted to test the new scales with a different sample, in line with Hinkin's (1998) recommendations for replication studies, and secondly to identify and validate the structure of the new measure, and its internal consistency. Previously, the new measure

showed good convergent validity with the Big Five and a measure of the Big Five was used in the validation studies for that reason. Each validation study is considered now.

10.8.1 Validation study 1: Testing for incremental validity against The Big 5 (TIPI), Work Engagement (UWES-9) and Work Performance

Chapter 8 (Part 1) validated the new measure of GAH and GAL against the Big Five (TIPI) and Work Engagement (UWES-9). It sought to confirm that the two higher order factors of GAH and GAL would measure similar facets of personality as other measures. Currently there are no direct measures of GAH and GAL and this study has addressed this for the first time. It has been shown that personality relates to job performance and it was anticipated that this new measure would show predictive validity over and above other measures for predicting job performance.

The new measure contained 14 item statements of performance relating to either GAH or GAL, designed specifically for this research, and which were based on the literature review for performance outcomes. The performance outcomes reflected actual performance, achieved over the last year, and linked directly to either GAH or GAL (see Table 8.1). Engagement was argued to be a useful performance outcome, as it has been found to relate to many aspects of work performance (Saks, 2006; Robertson & Cooper, 2010; Akhtar et al., 2015), as well as productivity output (Erikson, 2005), and the opportunity to use engagement as part of the validation process was appropriate. Furthermore, few studies inspected the relationship between employee engagement and job performance (Matamala, 2011, p.10), and even fewer have considered these in tandem with individual differences (Matamala, 2011), which this research study has.

In line with a recent Gallup poll (2015), and despite the continued lack of clarity on definition, engagement is seen as a crucial area for organisations, affecting as it does so many areas, including turnover, productivity, customer satisfaction and sickness rates, and particularly so when companies are estimated to spend millions in trying to improve engagement at work (Gallup, 2015). It has been found that understanding and improving engagement is key to organisational success, and to understanding how employees engage (Graber, 2015). Recent research applied similar methodology to that

used in this research: employee self-report measures on actual performance achieved (Graber, 2015), and Graber (2015) suggested that trying to understand how individuals best engage is more productive than a one-size fits all organisational measure which will miss individual values and drivers.

Another recent research study found personality to be a key determinant of engagement, and engagement itself an indicator of performance (Akhtar et al., 2015). This encouraged an investigation into the link between personality, engagement and performance for this research as part of the validation process. Results showed that GAH had incremental validity over and above the Big Five for predicting job performance and work engagement (44% of the variance), though GAL did not predict performance. Both GAH and GAL predicted work engagement over and above the Big Five (35% of the variance). The results found that GAH and GAL both show incremental validity over the Big Five and Engagement, in the prediction of work performance. GAH best predicts Engagement and is a clearer predictor of performance than the Big Five Factors. The Big Five Factors are, however, a better predictor of Performance than GAL.

The reciprocal nature of engagement, explained by Social Exchange Theory, is rooted in the idea that mutual exchanges compel bonding and obligation towards those involved. These obligations help build trust, loyalty and commitment over time resulting in a more co-operative and trusting workplace (Saks, 2006; Cropanzano & Mitchell, 2005; Fehr & Gächter, 2000). If only 30% of the workforce are engaged (Gallup Employment Engagement Survey, 2015), many positive aspects of these mutual exchanges are lost, and, therefore, knowing how to engage individuals through their different personality styles is a huge advantage for any organisation.

Notwithstanding the seemingly positive aspects of engagement, the dark sides of engagement were discussed in Chapter 8 (Part 1, 8.13) and it was argued that over-engagement can result in negative performance, in contradiction to the more positive view taken of it (Gorgievski et al., 2009; Hogan & Chamorro-Premuzic, 2015; Peccei, 2013; Garrad & Chamorro-Premuzic, 2016; Saks & Gruman, 2014). Given this limitation, using engagement as a positive work performance outcome needs to be

considered in any future research, and in the awareness that engagement is not necessarily related to enhanced performance at work. Further, the results of this study have implications for the way leaders engage their employees. If employees are predominantly GAL, the way to engage them will differ to that of predominantly GAH individuals. While GAL showed no predictive validity for performance, it did predict engagement, and given the above critique, and GAL comprising Interpersonal Sensitivity, awareness of how to best manage such employees is needed if over-engagement, burn-out and stress are to be avoided.

Despite the lack of definition and an apparent widespread acceptance of engagement as a positive factor for work satisfaction and performance as discussed above, others argue that there is rather a weak link between engagement and performance generally (Briner, 2015). Briner argues that that many high performers are not necessarily engaged, and, by the same token, many engaged people do not necessarily perform highly (Briner, 2017 in Warren, 2017, p.1). In an interview for a recent article on engagement at work (Warren, 23 June 2017), Briner argues for a clearer definition of engagement and more rigorous, and up-to-date measures, and that rather than measuring individual attitudes to work, we need to intervene in "goal-setting, job design, technology, training and staff selection" (Briner, 2017 in Warren, 2017, p.1). There are also implications for selection, recruitment and development which tends to focus on personality differences rather than how people engage and perform. How people engage will differ according to personality and the results in this study (Chapter 8, Part 1) suggest a way of measuring this.

10.8.2 Validation study 2: Testing for Validity against the Big 5 (IPIP), CSE, Dark Triad and Performance

In Chapter 8 (Part 2), a further validation study of the new measure of GAH/GAL was conducted, and included a comprehensive measure of the Big Five (IPIP), Core Self Evaluations (CSE) and Dark Triad (DT) traits, as well as the newly designed measure of Performance Outcomes. The four components of personality measured by CSE are self-esteem, locus of control, self-efficacy and neuroticism (Judge et al., 1997), and the

CSE was included as these four components relate to job satisfaction and performance (Judge, Bono, & Locke, 2000; Judge, Locke, Durham, & Kluger, 1998; Judge & Bono, 2001).

The Dark Triad, suggestive of malevolent behaviours (Paulhus & Williams, 2002), include Machiavellianism, Narcissism and Psychopathy, three clusters of personality behaviours that are correlated with social, emotional and often illegal behaviours (Furnham, Richards, & Paulhus, 2013). The Dark Triad often has a detrimental effect on workplace performance over time, though in the short term, the three aspects of the Dark Triad may enhance someone's career progression. Indeed, such individuals often reach higher levels in companies than those without such dark triad traits (Jonason et al., 2012) despite the problems they cause others. As GAH includes Recognition, Power, Hedonism and Sociability, the potentiality for dark triad traits was more pronounced than for GAL, which contained Interpersonal Sensitivity, relating to Agreeableness. A lack of Agreeableness was shown to be at the core of the Dark Triad traits, and Agreeableness is a key component of engagement at work (Akhtar et al., 2015), facilitating how well we get along with others. GAH, therefore, was expected to correlate with Dark Triad traits and results showed this to be the case, with GAH correlating with all three components of the Dark Triad.

GAL includes Adjustment and Interpersonal Sensitivity, both of which relate to career success and good interpersonal relationships. Adjustment, particularly, is seen as a moderator for any potential dark side behaviours (Hogan & Hogan 1997), so GAL was not expected to correlate with Dark Triad traits, although results showed a low correlation with the Dark Triad trait of Narcissism. When the HDS was included, however, GAL was positively correlated to Mischievous ($r = .47$), indicating the potential to manipulate others, and linked to the Machiavellian tendencies related to the Dark Triad. Mischievous is the dark side of someone who is cheeky, risk taking and likes excitement so well suited to GAL, which includes Sociability. It indicates someone not shy in social situations though the links to Machiavellianism and the dark side traits suggests manipulation, cunning and exploitation. This has important implications when considered in tandem with Adjustment.

While Adjustment is generally regarded as a positive factor in an individual's career success (Barrick & Mount, 2005; Chamorro-Premuzic, 2012; Hogan & Hogan, 2009; Judge, Erez, Bono, & Thoresen, 2002; Judge & Kammeyer-Mueller, 2007), too high a level of Adjustment is suggestive of someone who might use their empathy to manipulate others (Kilduff et al., 2010). Adjustment, coupled with the dark side of Mischievous, indicates a Machiavellian potential for the skillful manipulation of others (Kilduff et al., 2010), as a way to achieve their own career ambitions, and thus, to get ahead. As Hogan & Hogan (2009) argue, optimum levels of such traits, rather than maximum levels, are needed for people to achieve success at work. Having no potential dark sides of personality may be pleasant for other people, but it does not necessarily bode well for individual success, as it indicates a lack of the very traits which are also reflective of the bright sides of personality (Hogan & Hogan, 1997).

The two studies in Chapter 8 led to a final study in Chapter 9 which further investigated the dark triad traits and explored the relationship of GAH and GAL to the dark side of personality, measured by the HDS. Chapter 9 concluded this investigation with a final validation study of the GAH and GAL, and completes the circle of the Hogan Assessment measures: from HPI, MVPI to the HDS; from the investigation of higher order traits; to the formation and the validation, of the new short measure.

10.8.3 Validation study 3: Testing for Validity against the HPI and the HDS

This third, and final, empirical study (Chapter 9) investigated the validity of the GAH/GAL measure against the Hogan Development Survey (HDS). The HDS measures potential dark side traits of personality and is part of the Hogan Assessment suite of psychometric measures including the HPI and the MVPI, bringing this thesis back full circle to ST. The call for investigation into dark side traits has been made by numerous psychologists given the impact that such personality traits can have on organizations (Hogan & Hogan, 1997; Furnham & Taylor, 2004; Moscoso & Salgado, 2004; Guenole, 2014; Chamorro-Premuzic, 2015; Gallup, 2015) and the HDS was seen a valuable measure against which to validate the new short measure.

Dark side traits manifest behavioural styles such as moving away from other people; moving against other people and moving towards other people (Horney, 1950), all of which affect how we get on, or get along, with others. Such styles are shaped by our early-learned defensive styles which manifest as flawed personality reactions to others, and which can be particularly damaging in a work environment (Hogan & Hogan, 1997; Mansi, 2007). How people manage dark side behaviours through these three styles impact on how they engage with others, and it has been shown that engagement is a function of personality which affects performance, as well as a defensive style towards others.

Many dark side traits are self-explanatory, for instance, too much confidence manifests as arrogance; too much charm manifests as manipulation, and too much caution can lead to procrastination. One trait which is always seen as a positive, however, is Adjustment, (emotional stability), despite having the potential to derail leaders when overly developed. Research by Kilduff et al. (2010), found that those very high in emotional intelligence could manipulate both their own emotions and those of others so that others saw a highly favourable impression of them. Narcissists for instance, manage their emotional response to others where "their emotional presentation may differ from their inner feelings" (Kilduff et al., 2010, p. 133). Such individuals often used their highly honed emotional skills to enhance their own career goals at the expense of others, and their agility in assessing and controlling emotional situations, being Machiavellian in nature, helped them to get ahead at work (Kilduff et al., 2010). This contrasts with Hogan's assertion that the insider view, the view we have of ourselves, is not worth knowing and that it is only the outsider view – our reputation – that matters.

The drivers of behaviour are related to our values and motives, and values are imbued with emotional import, often keenly felt and shape our behaviour. If someone high on the Adjustment scale can manipulate their own emotions in order to play a part, and thus manipulate others, then the insider view is very important. Attempting to capture those meanings, drivers, motives and values helps to understand the individual and it is this that shows the value of using both a GAH and GAL measure. It is not just observed behaviours which matter, nor just performance at work (which can be manipulated), but

the deeply held values and motives of someone which will give the whole picture of how they might work, get on with others, and seek to achieve those goals. Reputation is based on our public persona which Narcissists create and promote very well, so knowing what drives someone to achieve may be as important as seeing how they achieve. A consideration will be given now to some of the limitations of this research, and how these might be addressed in any future research following this.

10.9 Methodological Limitations

The key limitations of the methodology used in this thesis, and considerations for future research, focus on four areas: 1) the use of MTurk as a data collection method; 2) the use of observer ratings vs. self-ratings; 3) the measures used for performance outcomes; 4) the lack of sub-scales (HICs) of the HPI and the use of archival data. These will be addressed now.

10.9.1 MTurk

A criticism of this research is that the data was collected from anonymous sources. While it is not uncommon in social psychology research to use archival data (see Sheppard et al., 2006), it can lead to limitations in the analysis. In Studies 1 and 2 the data was collected by Hogan Assessment Systems and the administration, design and feedback was the responsibility of the companies working with them. This allowed for large datasets to be collected, and the raw data offered for the purposes of this PhD research, but it meant that there was no input at the initial design stage in terms of data design collection, feedback or participant cohorts. This is a small criticism, given the generosity of Hogan Assessment Systems in supplying such large, archival and un-analysed databases for this research, but one that needs acknowledging here. It also affects discussion of the sampling methods, and can result in large amounts of missing data. Limiting data collection by country when using MTurk is a consideration, though as acknowledged earlier, to do so was seen as limiting for this research. Furthermore, the HPI and the MVPI have been validated across over 80 countries, on almost 2 million

people in over 40 languages (HAS, 2016) and it was judged to be culture fair and comprehensible internationally.

The studies in chapter 8 and 9 used MTurk for data collection. The advantages of this method of data collection was argued for in Chapter 8 (part 2) and supported by numerous studies showing the validity of it for social sciences research. Nevertheless, the criticisms directed at MTurk were outlined fully in Chapter 8 (part 2) and included three areas of concern: 1) payment fees; 2) the unregulated nature of MTurk; and, 3) the lack of feedback to participants. The low payment fees, particularly in less affluent countries such as India, may be potentially unethical, and MTurk is sometimes referred to as a 'digital workshop' (DeSoto, 2016), compelling poorer participants to take part more so than in richer countries (Fort, Adda, Sagot, Mariani, & Couillault (2014). This is addressed, in part, by researchers themselves who set a completion fee at a level which will attract enough participants to compete. If the completion fee is too low participants will respond much less, and the data will take much longer to collect; too high and it would be prohibitive for many researchers. A fair rate seems to attract a wider range of participants too, and was confirmed in these empirical studies, which attracted those earning up to $80,000+ per annum, suggesting that many people enjoy completing these tests and do so for reasons other than money.

Some further criticisms of MTurk are: that it is unregulated, with little support for either researchers or participants; and nor does it have a functional system for protecting those who may erroneously get poor feedback, which affects their credit scores and impacts on earning potential (Cushing, 2013). This is not something that can be addressed by individual researchers as MTurk set the terms for use, though a collective response from researchers might allow for feedback, where a summary of the research is posted. The lack of feedback is explained to MTurk participants at the beginning of the assessment so that false expectations are not set. A final point regarding MTurk participants is that they are usually more introverted than general cohorts of participants, and have lower self-esteem. This may account for their taking part in on-line surveys, but it does not affect reliable results, in accord with other data collection samples (Goodman, Cryder, & Cheema, 2012). Despite these criticisms, MTurk is generally accepted as being a useful, and valid, on-line data gathering tool for social scientists and an invaluable

method of collecting large amounts of data for research purposes (Buhrmester, Kwang, & Gosling, 2011; Johnson & Borden, 2012; Paolacci & Chandler, 2014).

10.9.2 Observer Ratings vs. Self-Ratings

A second limitation to consider is that of the use of both observer ratings and self-assessment of performance, as both have contributions to make to research, and both were used in this research project. An argument for observer ratings, made by Connelly & Hulsheger (2012), was that they are a more accurate reflection of reputation and performance and, when aligned to clear predictor variables, were found to offer a valid measure of personality (Hogan & Holland, 2003). Nevertheless, arguments against using them were that observer ratings are not necessarily reliable, or valid, as a way to measure performance, as they do not take into account individual motives and values (Funder & Sneed, 1993; Chamorro-Premuzic, 2007; Cook, 2009; Woods & Hardy, 2012), which this research needed to address.

An additional consideration when deciding on self-assessment of performance was that this research included the MVPI, which takes an insider view of personality. Hogan and Holland's (2003) study only included the HPI and did not include the MVPI, a measure for values or motives which are less observable than reputational personality factors (Chamorro-Premuzic, 2007). If values and motives are key to personality and to how we get ahead and get along, a consideration of internal factors as measured by the MVPI must be included. For example, key factors of personality such as Openness and Emotional Stability are not easy to observe and could be missed by observers more than those self-reporting anonymously. It has already been shown that high Adjustment can modify the way someone self-presents, and can even manipulate the way others feel. Observer ratings may also just be measuring social roles, rather than individual personality (Funder & Sneed, 1993). Indeed, Srivastava (2010) argued that the FFM is only a measure of social perception, thereby missing internal factors such as values, as well as human qualities such as joy, religiosity, honesty, thrift, and sensuality as examples (Paunonen & Jackson, 2000).

Additionally, the low correlation between supervisor ratings and objective criteria (.39) can result in supervisor ratings and performance criteria measuring different things (Cook, 2009). Supervisor ratings can be subjective as they rate those they like more highly and generously, thereby reducing validity in observer ratings (Cook, 2009; Chamorro-Premuzic, 2016). A further argument against observer ratings is that the more familiar someone is with their observer, i.e. manager / supervisor, the less objective the ratings are (Woods & Hardy, 2012). Given these considerations it was decided that self-assessment was the most appropriate choice for this research. The rationale for using self-report measures for the studies in Chapters 6-9 include the following:

In line with most personality assessments, self-reports are the most commonly used measures which accords with the research here;

Observer ratings require a completely objective assessment, something not always possible at work, where personal likes and dislikes affect the relationship and thus the perception of behaviour and performance (Woods & Hardy, 2012);

Asking participants to collect observer ratings could result in a biased sample, as they would tend to ask those who they got on with, lessening the objective nature of observer ratings. Research shows a low correlation between observer ratings and objective criteria such as performance (Cook, 2009) and the leniency shown by supervisors can invalidate such measures;

Many people now work in a variety of work patterns - either long distance, on flexible hours, remote working or even on different continents, and it was argued above that observable ratings are not always appropriate or available.

There are pros and cons to both observer and self-ratings, and one criticism of self-ratings is that even when anonymous, people may try to present themselves in a positive light, so that Narcissists, for example, will exaggerate their strengths and distort the assessment data (Connelly & Hulsheger, 2012). The idea that people consciously fake personality tests is, however, not supported by the data (Foster, Johnson & Gaddis,

2008; Hogan, Barrett & Hogan, 2007), who found that over time, people did not manipulate their scores to manage the impression they made. Moreover, the self-reports collected in these studies are not just anonymous but considered very low risk, minimizing the tendency for social desirability and positive self-presentation. Nevertheless, future research would collect observer ratings, as well as self-report data, and this is discussed further below (10.13).

10.9.3 Performance Outcomes

A third limitation in the studies conducted in this thesis is that of performance outcomes. In Chapter 6 (Table 4) the performance indicators used were those from the archival datasets donated for this study. The value of assessing for performance in this study was limited by the fact that so few participants had added their supervisor ratings to the data collection. This gives little understanding of how far personality correlated with performance, and a problem with missing data, particularly so with archival data, and one which could be controlled more in future studies. This also highlights one of the limitations of observer ratings. The 19 factors were reduced using FA to identity fewer performance measures, and two prominent areas were found: Technical and Social performance. The fitted model (displayed in Figure 6.4) suggests that GAH and GAL only account for a small amount of variance in job performance: 3% in Social Performance and 9% in Technical Performance. Given the limitations of the 185 responses, this is a pertinent criticism of the methodology and one that would be improved in any future research. Lastly, performance outcomes are often not theoretically grounded, are subject to personal preference and bias, and can be too unwieldy and inconsistent. For instance, outcomes vary from one organisation – even from one department – to another and may not be appropriate for every job role assessed. Performance measures were incomplete and at times showed too few responses to include in the data analysis, and they need to be consistent and relevant to the role, and fewer than the 19 used in the early studies here. This was addressed in the later studies in this research when new performance outcomes were developed and used for analysis in Chapter 8 (Parts 1 and 2) and Chapter 9.

Regarding the design of items for questionnaires, a criticism could be made of the language as noted above, in that some items were idiomatic, and may cause confusion. While only one or two items in the questionnaires designed for this research suggest idiomatic wording, it is a point worth noting. Krosnick & Berent (1993) urge a consideration of how respondents will read labels on questionnaire scales, so as to make it easy for them to interpret what is required. They argue that clearly labelled scales will avoid confusion, and ambiguity, and will give more reliable and valid data (Krosnick & Berent, 1993), and that accurate, clearly labelled questions should indicate to respondents exactly what is meant when they answer (Krosnick & Fabrigar, 1997). Nevertheless, and despite trying to develop clear, measurable criteria with which to assess performance, the performance outcomes designed here are limited in number, are theory driven rather than driven by organisational criteria, and have only been used in this research study. No validation so far has been conducted on the performance outcomes used in Chapters 8 and 9, future studies would need to include inter-rater reliabilities in the development of performance outcomes.

10.9.4 The lack of sub-scales (HICs) of the HPI and the use of archival data

It was disappointing not to be given access to HICs on the HPI, though overall it was felt this did not affect the aims of the thesis, which were to investigate whether GAH, GAL and FM could be found within the HPI and the MPVI, and which scales would form GAH, GAL and FM. Each of the seven primary scales contains HICs, and the HPI has a total of 44 HICs. As there is no item overlap among the seven primary HPI scales, the HICs are distinct in interpreting the individual responses, and could offer a deeper interpretation of the HPI scales.

The value of investigating HICs is that they offer a deeper interpretation of each primary scale and add nuance to the scores for each scale, outlined in 5.6. For instance, Sheppard et al. (2006) found that 81 out of 138 HICs showed bias, with 38% of items "biased by sex" (p.449). They argue, nevertheless, that these slight biases are not a problem for researchers and removing biased items "may have little practical value for improving test quality" (Sheppard et al., 2006, p.449). Given the research findings here, where Ambition is sited in GAL rather than GAH, it was notable that in Sheppard et

al.'s (2006) research that Ambition manifested in men through competitiveness and social dominance and women through life satisfaction, resonating somewhat with the results here, though their results were "not substantial" (p.450). More interesting was the difference in ethnicity, discussed above, and which could be investigated further in future studies.

Using archival data is limiting in that the design, implementation and collection of data is less controlled. While access to large, archival data sets is useful in social psychology research, it can result in missing data affecting the interpretation of the data to an extent. To reiterate, despite item level responses not being available for two of the studies, it would be considered a necessity should the HPI be used in any future research. This limitation also relates to the use of archival data, discussed above and it is expected that further studies, as withy data collected in studies 4 and 5, would be more stringently controlled. This is discussed further in Chapter 10, in relation to the HPI and gender (10.13). Having discussed the methodological limitations, those of the underlying theory will now be considered.

10.10 A Critique of Socioanalytic Theory

A key criticism of ST is its argument that personality is predicated on someone's reputation. Despite arguing for both identity and reputation as components of personality the focus is heavily on reputation. This may reflect that this is a theory of personality in social settings so reputation may be more observable, but it limits the scope of understanding personality without considering the insider view. There is a "distinction between the person you think you are – your identity – and the person we think you are – your reputation" (Hogan, 2008, p.3). Hogan argues that the person we think we know is not worth knowing, and that it is only other people's view of us that counts. While one's reputation carries much weight, particularly in an organisational setting, the Socioanalytic argument dismisses one of its own core tenets, which is that how we seek to find meaning through our values and motivations (the insider view) plays such an important role in individual personality. A sense of purpose and personal values are not usually noticeable to others, and only the behaviours manifesting from

these are key to workplace performance. If internal perspectives are ignored, then it could be argued we are dealing with Behaviourism, rather than a ST of personality.

If personality only relates to what others see, we miss out on this valuable insider aspect of people. An example is that of reading Einstein's theories, which would give a good idea of his intellect and creative thinking. Meeting him, however, as a scruffy, shambolic, often late, introverted individual may not make the best impression. A postal clerk for many years, until his theory was published, he may have been regarded as a 'ne'er do well', bumbling along through life, often late and not contributing very much to social interactions (Isaacson, 2008). Judging solely on reputation can miss out on key aspects of a person. Moreover, those best suited to presenting a highly positive image, those who manage the impression they make on others highly effectively, may be masking a quite unpleasant interior. Narcissists and psychopaths, as two examples, do very well in charming, engaging and influencing others. They are seen as dynamic and highly desirable personalities, they interview well, and their positive reputation often precedes them in the business world, much to the regret – often too late - of many organisations.

A criticism of ST, therefore, is its focus on reputation. Reputation may be the most significant aspect of an individual, according to ST theory, particularly when relating it to the workplace, but it is not necessarily the most important part of that person. It is not their character; character is the core of who we are, more than innate traits, it is the essence of our personality. Our character is often subsumed in childhood, allowing a fit into existing systems such as family and school, so we learn not to be who we truly are, particularly when trying to get along with others, and especially so with those in positions of authority such as parents, teachers etc. (Adler, 1932; Horney, 1945; 1950). Horney (1950) stated that we learn to defend ourselves against authority or threatening figures through our defensive reactions of either moving away from, moving against, or moving towards others, thus suppressing our character, which later manifests as a dark side of personality. So, while reputation is important, it is argued here that so too is the identity of the individual that may be the internal key that drives them, and compels them to find meaning, as argued by ST. A further critique of ST is that FM was not found to be contained within the HPI and the MVPI in this research.

10.11 A Summary Critique of the Five Factor Model of Personality

Given its influence and global usage, a consideration of the FFM is appropriate, and while generally seen as robust and stable, it does have some criticisms. One of the major criticisms of the Big Five model, on which the HPI is based, is that many aspects of being human are not included in how it measures personality. Examples include joyfulness, a sense of play, sensuality, humour, honesty, sexiness, thriftiness, conservativeness, masculinity/femininity, snobbishness, egotism, pride, thrill seeking and spirituality (Paunonen and Jackson, 2000; Boyle, 2008), all of which are key not only to identity and reputation, but a significant component of individual meaning and purpose. A reason that a higher order factor of FM was not part of the new short measure may therefore, be in part due to the measures used and how we interpret individual 'meaning'.

Furthermore, while the FFM supports the notion that personality is stable over time, there is an argument that the model is rather static in its view of personality, and that personality can change over time (Terracciano et al., 2006; Wilks, 2009). Agreeableness and Conscientiousness, for instance, did not show consistency over test-retest correlations across a 45-year study of the Big Five traits (Twenge, 1997; Soldz & Vaillant, 1999; Srivastava, John, Gosling, & Potter, 2003), and generally, the research looking at consistency of the Big Five traits showed that "the Big Five personality traits are subject to considerable change across the adult years" (Boyle, 2009, p.4). Changes across the whole lifespan support personality changes to some extent, with slight increases in Agreeableness and Conscientiousness over time, and decreases in Extraversion, Neuroticism and Openness from adulthood onwards (Srivastava et al., 2003; McCrae & Terracciano, 2005), even amongst the very elderly (Boyle, 2009). It may be that the current Five Factor Model is not comprehensive enough, nor flexible enough, to incorporate all that is human, nor what gives people a sense of purpose, and this has affected FM not being found in this research study.

10.12 Application of Research Findings

If the purpose of personality theory is to explain how the individual engages in social action (Hogan, 1976, 1983; Hogan, Jones, & Cheek, 1985), then knowing how someone is likely to perform at work is useful for organisations, particularly for assessment, selection and future development. This research has shown how personality differences can influence how people get ahead, or get along, at work and how they can affect performance outcomes. Currently, most personality measures seek to assess the maximum of personality differences, but as the arguments against the GFP show, and in the discussion above of too high a level of Adjustment as an example, the maximum of a trait can lead to potential dark sides of personality, with consequences for work performance. The HPI and HDS assess for the optimum, rather than the maximum, level of differences and explain how too extreme a score can have an impact on individuals and their behaviour. Furthermore, the HPI and the MVPI combined contain 406 questions in total. Completion of both is a costly and time consuming process, particularly so if used in the preliminary selection stage, and might deter smaller organisations from using them.

The design, development and validation of the new measure for GAH and GAL against other measures demonstrated its usefulness as a new short measure for personality differences which could predict performance. Awareness of how to motivate and engage someone who has a predominately GAH or GAL preference, and what drives them, i.e. recognition or feeling valued by their colleagues, has an impact on the style of management, leadership, engagement and performance of individuals at work. A shorter psychometric measure, which incorporates measures related to validated performance criteria, is argued to be of more relevance and value, at an earlier stage, than the two Hogan measures used in this study so far. This new measure offers a shorter, and quicker, way of assessing personality, which includes reputational traits as well as individual values and motivating needs. This has important implications for organisations including recruitment, talent management, and senior management development. Awareness of one's limitations is key to learning how to manage them, and coaching is a way of addressing this. Recent research argues that it is not the strengths we need to focus on in talent management, but the dark sides (Chamorro-

Premuzic, 2016), and the toxic behaviours that tend to be over-developed, particularly in senior managers. Examples include that of leaders who are often unaware of their own dark side behaviours, resulting in derailment, so focus in a developmental programme needs to help them to manage their toxic behaviours (Chamorro-Premuzic, 2016). People also need to consider the social interest of their attempts to get along with others, as well as getting ahead at work (Adler, 1979). Failure to do so can result in "toxic and destructive trajectories" (Rauthmann & Kolar, 2013, p.582), with significant impact on their colleagues and the organisations (Kets de Vries, 1989).

Given the relationship of the HDS to GAH and GAL, this research can help understand how the dark side of personality might manifest and how to best work with individuals according to their individual differences. The key to both GAL and GAH was not, as expected, Adjustment, which did not form part of GAH at all, but possibly a set of well-developed social skills. Results here found that Sociability was part of both GAH and GAL, and indicated that it might be social skills which facilitate social interaction, including the ability to: influence and persuade (Argyle, 1969); the ability to self-monitor and manage the impression we give to others (Leary & Kowalski, 1990; Snyder & Copeland, 1989); being responsive and sensitive to others' needs and moods; being flexible and adaptable in social situations (Gardner, 1993); being trusting and trustworthy; and, being able to listen well (Hogan & Lock, 1995), rather than emotional stability.

GAL's two highest factors were Adjustment and Interpersonal Sensitivity which would ease social interactions and interpersonal relationships at work. Nevertheless, these factors could also impede performance and may be inimical to work success. Talent management could utilise the knowledge of how individuals with a preferred style of GAH or GAL would behave at work, and how they would fit into the culture of the organisation. The new measure has predictive validity for performance and engagement and both are valuable to organisations in utilising their employees' strengths, and development within teams.

Table 10.1 *The new measure for GAH and GAL.*

GAH – GAL Personality Measure
Adjustment (.80) GAL
Recognition (.80) GAH
Interpersonal Sensitivity (.78) GAL
Sociability (.69, .30) GAH & GAL
Ambition (.58) GAL
Power (.47) GAH
Hedonism (.41) GAH

Knowing how someone will perform at work is of great value to any organisation and an understanding of whether that person may be more likely to use GAH or GAL attributes will help inform at selection and development stages. It has been shown that personality is related to both engagement and performance outcomes. Engagement will manifest differently for both GAH and GAL, and these two styles will have an impact on how someone manages a team. This new short measure has demonstrated validity, and utility, and offers a way of measuring for GAH and GAL preference styles which could match the roles required. The usefulness will indicate what drives someone, how likely they are to work with others, what underpins their motivation and style of working. It offers an understanding of how the seven primary scales of the HPI, and the drivers and values of the MVPI fit into ST and manifest at work. The ability to assess for GAH and GAL offers a chance to plan for personality differences in performance and when the HDS is included, for any derailing behaviours. Future research projects could assess how far selection, using the new short measure, predicts potential dark side behaviours, matched against performance criteria.

10.13 Future research

There have been several suggestions for future research put forward throughout the preceding chapters. Primarily, while archival data has been generously donated to this research, the limitations of it suggest that any future research should collect data directly, or with an organisation but with an understanding that all data is available for analysis. This allows for control on how the data is collected, when and with whom, and results in no missing data, as questionnaires could be designed so that participants must complete each section of on-line questionnaires before proceeding. This would ensure rigorous and reliable data and address the limitations above. The limitations of performance outcomes have been addressed above, and following this, research should include clearly defined and relevant performance outcome criteria, redesigned specifically to match the respondent's job criteria, rather than generic, organisational criteria, not matched or relevant to every participant. The performance criteria need to be clearly aligned to the assessment in order to reduce complexity and confusion and, where performance measures are designed specifically for research to ensure inter-rater reliability is conducted.

It is recommended that further studies using the HPI include HICs, as this would enhance the analysis of the data. Personality does not manifest in a vacuum, and GAH and GAL, as with so many personality measures, is situationally dependent. It could make for a useful study to see how individuals manifest these aspects of personality when assessed in group settings, and how far this influences performance, as well as how the HICs indicate any differences between genders or ethnic groups. As with the study conducted by Sheppard et al. (2006), data was provided for research purposes (for three of the six studies in this thesis). Sheppard's study (2006), comprise the 44 composite HICs, as well as individual responses, which this research was not able to do.

Future research could also consider combining different methods to collect feedback on performance. Examples include multi-source rating systems, using both self-reports and observer ratings, where agreed performance criteria are included. The synthesis of both assessments could be analysed to assess an individual's personality and potential future performance. Research showing multi sources including 360-degree feedback, clients,

customers, managers and peers' evaluations, as well as self-reports is effective in measuring leadership performance (Smither, London, & Reilly, 2005; Smither & London, 2009; Shyamsunder & Barney, 2012) and a consideration for future studies. Moreover, an opportunity to include qualitative interviews could explore what meanings the individual has towards work and colleagues, and what drives them, based on their personal values and goals. This could suggest ways in which FM might be measurable and of use in tandem with the new measure.

This research has acknowledged the issue of gender differences in the measures used, and addressed some important points raised by Sheppard et al. (2006) regarding sex and gender differences. In addition, measurement invariance analyses were conducted for sex and ethnicity. While there are no meaningful differences for gender in either the HPI or the MVPI, nor adverse impact (Hogan Research Division, 2012), the inclusion of HICS into any future research may point to nuanced differences in style of GAH and GAL between gender and ethnicity. An example is that of Adjustment which shows a slight bias in Shepard's study (2006), of female answers to the sub-scale of Self-Criticism and Distressed Alienation, and in Ambition, of men toward Leadership, social dominance and taking charge (Sheppard, 2006).

In this thesis, results found that Ambition loaded onto GAL for both men and women, slightly higher for men, and that Interpersonal Sensitivity loaded more for men onto GAL. All other higher order factors loaded equally. Adjustment was found to be negatively correlated for GAH for both men and women, but particularly so for women. This research also found slight differences in ethnicity, with the main difference that white males showed stronger relationship to Hedonism in GAH, than other ethnic groups. Interpersonal sensitivity in this research found all other ethnic groups to have stronger relationship to Interpersonal Sensitivity, suggesting that Hedonism, and thereby possible privilege, harden our responses to others, and reduce our empathy.

It was argued here that such differences may relate to social class, as much as gender and ethnicity, and further research could explore the sub-scales in relation to the composite higher order factors of GAH and GAL. As with Sheppard's study (2006),

these may relate more to class than ethnic grouping or sex, and invite further investigation.

10.14 Conclusion

This thesis has sought to contribute to the field of personality and individual differences, and to address a gap in personality research with an investigation into higher order factors within two psychometric measures: the HPI and the MPVI. While much research has investigated personality, and sought fewer and fewer factors in measuring it, no research has been conducted which investigated both personality and identity, nor which factors comprise the three strands of socio-analytic theory: GAH, GAL and FM, or investigated the underlying higher order factors of the HPI and the MVPI. It is proposed that this investigation into ST to examine which factors underlie the core tenets of the theory contributes to the current understanding of personality and individual differences.

Six empirical studies were undertaken, and two distinct higher order factors were found to demonstrate GAH and GAL, and while FM was not shown in these results, there is much to support the theory that meaning and purpose has value in how people achieve their goals. The results of the first three studies resulted in the unique design of a short measure for GAH and GAL. Studies 4, 5 and 6 validated the new measure against the Big 5 factors of personality, the Core Self Evaluation Scale, a measure of Engagement, Performance factors, the Dark Triad and the Hogan Development Survey (HDS). The findings of the research, and the implications of how GAH and GAL manifest, and influence work, engagement and leadership have been discussed.

The thesis demonstrates two higher order factors within the Hogan measures – GAH and GAL – and suggests a way to measure them with greater simplicity than the HPI and the MVPI. From an investigation of the underlying theory, to confirmation of higher order factors within the HPI and MVPI to include reputation and identity, these studies have shown the development of the new short measure. It is argued that this new measure will be cost and time effective in the selection process and useful as an initial assessment for development, coaching and career progression. Areas such as

performance, engagement, leadership and the dark side have all been considered in this thesis; key areas which impact significantly on individuals in the workplace, as well as organisations generally. It is hoped that the new measure will offer a brief, valid and worthwhile way in which to assess for individual differences of personality which addresses these key areas.

This new measure for GAH/GAL has been shown to be relevant to performance outcomes, has a shorter completion time, includes factors which current measures of the Big 5 do not (i.e. Ambition), and moreover, has been shown to have predictive validity over and above the Big 5 in predicting job performance and engagement. An understanding of how personality and individual differences of GAH and GAL manifest in a social setting, and how these differences impact on the way people work, and get on with others, has relevance and utility for many areas of work, including engagement and leadership.

This research has sought to expand the understanding of how people get ahead and get along at work and, with the validation studies using the HDS, it has indicated how GAH and GAL could be influenced by potential dark side behaviours. Certain scales expected to fall into one or other of the higher-order factors were not always found in the results, for instance Ambition was found to be more related to GAL than GAH, and is discussed above, whereas GAH was driven very much by a need for Recognition and Power, both of which were strong indicators of success at work. The usefulness of this new short measure has been discussed, as have the limitations. Clearly, there is room for development of the ideas investigated here, and these were outlined above. Some of these are already in planning as the new measure needs more validation, and application, to assess its utility.

Although results are preliminary they show that the underlying composition of GAH/GAL appears to be significantly related to desirable work outcomes, and while in no way attempting to deny the usefulness of the Hogan instruments, the new measure offers a shorter, quicker and arguably cheaper method of assessment for selection and development. Many personality measures currently measure reputational traits only, and this research has demonstrated that the insider view – that of identity – is as

important a consideration when attempting to gain an understanding of what drives individuals in their careers, both in how they attain their goals, and develop relationships with others.

In conclusion, this research had three main aims which were: to investigate whether GAH, GAL and FM could be found within the HPI and the MPVI; to develop a new short measure whereby GAH, GAL and FM could be assessed; and, finally, to validate the new measure against existing measures, and demonstrate its validity for the purposes of selection, development and performance outcomes. This thesis has addressed an area of psychological research which so far had not been investigated, and has contributed to the study of personality differences at work, as well as indicating the direction future research, building on these findings, can be developed.

References

Adami, C. & Hintze, A. (2013). Evolutionary instability of zero- determinant strategies demonstrates that winning is not everything. *Nature Communications, 4*:2193. Retrieved from https://www.nature.com/articles/ncomms3193.

Adler, A. (1927). Understanding human nature. In H.L. Ansbacher, & R.R. Ansbacher, (Eds). *The Individual Psychology of Alfred Adler - A Systematic Presentation in Selections from his Writings*. (1956). New York: Basic Books Inc.

Adler, A. (1932). *The Practice and Theory of Individual Psychology*. NY: Kegan Paul, Trench, Trubner & Co. Ltd.

Adler, A. (1979). *Superiority and Social Interest: A collection of Later Writings*. H.L. Ansbacher & R.R. Ansbacher (Eds). 3rd Ed. NY: Norton.

Adler, M.G. & Fagley, N.S (2005). Appreciation: Individual Differences in Finding Value and Meaning as a Unique Predictor of Subjective Well-Being. *Journal of Personality 73*(1), 79-114.

Akhtar, R., Boustani, L., Tsivrikos, D., & Chamorro-Premuzic, T. (2015). The engageable personality: Personality and trait EI as predictors of work engagement. *Personality and Individual Differences 73*(1), 44–49.

Allport, G.W. (1927). *Pattern and Growth in Personality*. New York: Holt, Rinehart & Winston.

Allport, G.W. (1961). *Pattern and Growth in Personality*. 2nd Edition. New York: Holt, Rinehart & Winston.

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders: DSM-IV-TR.* Washington, DC: Author.

Anastasi, A. (1982). *Psychological Testing.* (5th Edition). New York: Macmillan.

Anastasi, A. & Urbina, S. (1997). *Psychological Testing* (7th Edition). Upper Saddle River (NJ): Prentice Hall.

Anderson, C., John, O.P., Keltner, D. & Kring, A.M. (2001). Who attains social status? Effects of personality and physical attractiveness in social groups. *Journal of Personality & Social Psychology, 81*(1), 116–32.

Anderson, G., & Viswesvaran, C. (1998). An update of the validity of personality scales in personnel selection: A meta-analysis of studies published after 1992. *Paper presented at the 13th Annual Conference of the Society of Industrial and Organizational Psychology*, (April, 1998), Dallas, TX.

Anderson, J. L. (1991). Rushton's racial comparisons: An ecological critique of theory and method. *Canadian Psychology/Psychologie canadienne*. *32*(1) 51–62.

Anderson, N. & Ones, D.S. (2003) The Construct Validity of Three Entry Level Personality Inventories Used in the UK: Cautionary Findings from a Multiple-Inventory Investigation. *European Journal of Personality, 17*(1): S39–S66.

Andrews, M. C., Baker, T. & Hunt, T. G. (2010). Values and Person – Organization Fit: Does Moral Intensity Strengthen Outcomes? *Journal of Leadership and Organization Development, 32*(1), 5-19.

Ansbacher, H. L. (1978). The Development of Adler's Concept of Social Interest: A Critical Study. *Journal of Individual Psychology*, *34*(2), 118-152.

Arbuckle, J. (2003). *Amos 5.0 Update to the Amos User's Guide*. Chicago, IL: Smallwaters Corporation. Retrieved from http://www.sussex.ac.uk/its/pdfs/Amos_18_Users_Guide.pdf

Argyle, M. (1969). *Social Interaction*. London: Methuen.

Argyle, M. (1991). *Co-operation: The Basis of Sociability*. New York: Routledge.

Ashton, M. C., Lee, K., Goldberg, L. R., & de Vries, R. E. (2009). Higher Order Factors of Personality: Do They Exist? *Personality and Social Psychology Review*, *13*(2), 79-91.

Ashton-James, C. E., & Levordashka, A. (2013). When the wolf wears sheep's clothing: Individual differences in the desire to be liked influence nonconscious behavioral mimicry. *Social Psychological and Personality Science*, *4*(6*)*, 643-648.

Auden, W.H. "*Hic et Ille*". In Snyder, M. (1987). *Public appearances/private realities: The psychology of self-monitoring*, 105. New York: Freeman.

Avolio, B.J. & Locke, E.E. (2002). Contrasting different philosophies of leader motivation: Altruism versus egoism. *Leadership Quart*. *13*(2), 169–191.

Avolio, B. J., Waldman, D. A., & McDaniel, M. A. (1990). Age and work performance in non-managerial jobs: The effects. *Academy of Management Journal*, *33*(2), 407-407.

Axford, S. N. (1996). Review of the Hogan Personality Inventory (Revised). In J. C. Impara & J. C. Colony (Eds). *The Supplement to the Twelfth Mental Measurements Yearbook.* Lincoln, NB: The University of Nebraska Press.

Babiak, P. (1995). When psychopaths go to work: a case study of an industrial psychopath. *Applied Psychology*, *44*(2), 171-188.

Babiak, P. & Hare, R.D. (2007) *Snakes in Suits: When Psychopaths go to Work*. NY: HarperCollins.

Bagby, R.M., Costa, P.T. Jr., Widiger, T.A., Ryder, A.G., & Marshall, M. (2005). *DSM-IV* personality disorders and the Five-Factor Model of personality: a multi-method examination of domain- and facet-level predictions. *European Journal of Personality 19*(4), 307–324.

Bailey, C., Madden, A., Alfes, K., & Fletcher, L. (2015). The Meaning, Antecedents and Outcomes of Employee Engagement: A Narrative Synthesis. *International Journal of Management Reviews*. *19*(1), 31–53.

Bakker, A.B. (2009). Building engagement in the workplace. In R. J. Burke & C.L. Cooper (Eds.), The peak performing organization (2008), (pp. 50-72). Abingdon, UK: Routledge.

Bakker, A. B. & Demerouti, E. (2008) Towards a model of work engagement. *Career Development International, 13*(3), 209-223.

Bakker, A. & Schaufeli, W. (2008). Positive organizational behavior: engaged employees in flourishing organizations. *Journal of Organizational Behavior, 29*(2), *147-154.*

Balducci, C., Fraccaroli, F., & Schaufeli, W.B. (2010). Psychometric Properties of the Italian Version of the Utrecht Work Engagement Scale (UWES-9) A Cross-Cultural Analysis. *European Journal of Psychological Assessment, 26*(2):143–149.

Barkow, J.H., Cosmides, L. & Tooby , J. (Eds). (1992). *The Adapted Mind: Evolutionary Psychology and the Generation of Culture.* NY: Oxford University Press.

Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*(1), 1-26.

Barrick, M.R., & Mount, M.K. (2005). Yes, Personality Matters; Moving on to more Important Matters. *Human Performance, 18*(4), 359-372.

Barrick, M.R., Stewart, G.L., Neubert, M.J., & Mount, M.K. (1998). Relating member ability and personality to work-team processes and team effectiveness. *Journal of Applied Psychology*, *83*(3), June 1998, 377-391.

Barrick, R.M., Mount, M.K., & Judge, T. A. (2001) Personality and Performance at the Beginning of the New Millennium: What do we Know and Where Do we Go Next? Personality and Performance, *9*(Issues 1 & 2), 9 – 30.

Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta- analysis. *Personality Psychology, 44(1),* 1–26.

Barrick, M.R., Mount, M.K., & Gupta, R. (2003). Meta-analysis of the relationship between the Five-Factor Model of Personality and Holland's Occupational Types. *Personnel Psychology, 56*(1), 45-74.

Barrick, M. R., Mount, M. K., & Judge, T. A. (2001). Personality and performance at the beginning of the new millennium: What do we know and where do we go next? *International Journal of Selection and Assessment*, *9*(Issues 1 & 2), 9-30.

Bartram, D. (2007). Increasing validity with forced-choice criterion measurement formats. *International Journal of Selection and Assessment*, *15*(3), 263–272.

Bates S (2004). 'Getting engaged'. *HR Magazine*, *49*(2), 44–51.

Baumeister, R.F. (Ed) (1986). *Public Self and Private Self*. NY: Springer-Verlag.

Baumeister, R.F. (1997). Esteem threat, self-regulatory breakdown, and emotional distress as factors in self-defeating behavior. *Review of General Psychology, (1997) 1*(2), 145-174.

Baumruk, R. (2006). 'Why managers are crucial to increasing engagement', An interview by Bob Gorman Jr., Robert E. Gorman Communication Ray Baumruk, Hewitt Associates. *Strategic HR*. Melcrum Publishing Ltd.

https://www.insala.com/employee-engagement/why-managers-are-crucial-to-increasing-engagement.pdf.

Baumruk R., & Marusarz, T. (2004). *Employee Engagement: Insights into Why It Matters and What You Can Do About It*. Hewitt Associates LLC

Beckers, D.G.J., Van der Linden, D., Smulders, P.G.W., Kompier, M.A.J., Van Veldhoven, J.P.M. & Van Yperen, N.W. (2004), 'Working overtime hours: relations with fatigue, work motivation, and the quality of work'. *Journal of Occupational and Environmental Medicine*, *46*(12) 1282–1289.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*(2), 238-246.

Bentz, V.J. (1985). A View from the Top: a 30 year perspective of research devoted to discovery, description and prediction of executive behaviour. Paper presented at 93rd Annual Convention of the APA, Los Angeles. In Hogan, R., & Hogan, J. (1997). *Hogan Development Survey Manual*. UK Edition. Psychological Consultancy Limited, Kent.

Bertrand, M., & Sendhil, M. (2004). Are Emily and Greg More Employable than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination. *The American Economic Review 94*(4): 991-1013.

Biersner, R.J., & Hogan, R. (1984). Personality Correlates of Adjustment in Isolated Work Groups. *Journal of Research in Personality*, *18*(4), 491-496.

Block, J. (1965). *The Challenge of Response Sets*. New York: Appleton-Century.

Block, J. (1995). A contrarian view of the five-factor approach to personality description. *Psychological Bulletin*, *117*(2), 187-215.

Block, J. (2010). The five-factor framing of personality and beyond: Some ruminations. *Psychological Inquiry, 21*(1), 2–25.

Blumer, H. (1969). *Symbolic interactionism: perspective and method*. Englewood Cliffs, NJ: Prentice-Hall.

Boehm, C. (1999). *Hierarchy in the forest.* Cambridge, MA: Harvard University Press.

Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley.
Book, A., Visser, B.A., & Volk, A.A. (2015). Unpacking "evil": Claiming the core of the Dark Triad. *Personality and Individual Differences, 73*(2015), 29-38.

Boon, C., & Den Hartog, D. N. (2011). Human resource management, person–environment fit, and trust. *Trust and human resource management*. London: Edward Elgar.

Borman, W. C. (1978). Exploring upper limits of reliability and validity in job performance ratings. *Journal of Applied Psychology, 63*(2), 135-144.

Boudreau, J. W., Boswell, W. R., & Judge, T. A. (2001). Effects of personality on executive career success in the United States and Europe. *Journal of Vocational Behavior, 58*(1), 53–81.

Bowen, C.C., Swim, J. K., & Jacobs, R. R. (2000). Evaluating Gender Biases on Actual Job Performance of Real People: A Meta-Analysis. *Journal of Applied Social Psychology, 30*(10), 2194–2215.

Bowlby, J. (1969). Attachment. *Attachment and Loss, (vol.1). 2nd ed.* New York: Basic Books.

Bowlby, J. (1999). Attachment. A*ttachment and Loss* (vol. 1). 2nd ed. New York: Basic Books.

Boyle, G. J. (2008). Critique of the five-factor model of personality. *Humanities & Social Sciences papers.* Paper 297. Retrieved from http://epublications.bond.edu.au/hss_pubs/297.

Breaugh, J.A. (1992). *Recruitment: Science and practice.* Boston: PWS-Kent.

Briner, R.B. (2015). *The Future of Engagement: Thought Piece Collection. What is employee engagement and does it matter? An evidence-based approach*. Retrieved from http://engageforsuccess.org/wp-content/uploads/2015/09/Rob-Briner.pdf

Briner, R.B. (2017). Interview in C. Warren, (2017). Every man for himself: is employee engagement reaching its full potential? *People Management*. Retrieved from http://www2.cipd.co.uk/pm/peoplemanagement/b/weblog/archive/2017/06/23/every-man-for-himself-is-employee-engagement-reaching-its-full-potential.aspx.

BPS Code of Good Practice for Psychological Testing. British Psychological Society (2016). Retrieved from www.psychtesting.org.uk, https://ptc.bps.org.uk/sites/ptc.bps.org.uk/files/Documents/Guidelines%20and%20Information/PTC09%20Code%20of%20good%20practice.pdf

Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York: Guilford Press.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Newbury Park, CA: Sage.

Buhrmester, M., Kwang, T., & Gosling, S.D. (2011) Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, *6*(1), 3-5.

Buller, D. J. (2000). Evolutionary Psychology. In M. Nani and M. Marraffa (Eds.), *A Field Guide to the Philosophy of Mind*. An official electronic publication of the Department of Philosophy of Rome. Retrieved from http://host.uniroma3.it/progetti/kant/field/ep.htm.

Buller, D. J. (2005). *Adapting Minds: Evolutionary Psychology and the Persistent Quest for Human Nature*. Cambridge, MA: MIT Press.

Buller, D. J., & Hardcastle, V.G. (2000). Evolutionary Psychology, Meet Developmental Neurobiology: Against Promiscuous Modularity. *Brain and Mind 1*(3) 307–325.

Burke, R.J. (2001). Workaholism components, job satisfaction, and career progress. *Journal of Applied Social Psychology*, *31*(11), 2339–56.

Bushman, B. J., & Baumeister, R. F. (1998). Threatened egotism, narcissism, self-esteem, and direct and displaced aggression: Does self-love or self-hate lead to violence? *Journal of Personality and Social Psychology*, *75*(1), 219-229.

Buss, A.H. (1997). Evolutionary Perspectives. In Hogan, R., Johnson, J., & Briggs, S. (Eds). *Handbook of Personality Psychology*, pp. 346-366. San Diego, CA: Academic Press.

Buss, D. M. (1999). *Evolutionary Psychology: The New Science of the Mind*. Boston: Allyn & Bacon.

Buss, D.M. (2005) (Ed). *The Handbook of Evolutionary Psychology*. John Wiley & Sons, Inc. NJ: USA.

Buss, D. M. (2009). The great struggles of life: Darwin and the emergence of evolutionary psychology. *American Psychologist*, *64*(2), 140-148.

Buss, D. M. & Barnes, M. (1986). Preferences in Human Mate Selection. *Journal of Personality and Social Psychology, 50*(3), 559-570.

Campbell, D. T. (1963). Social attitudes and other acquired behavioural dispositions. In S. Koch (Ed.). *Psychology: A study of a Science*. New York: McGraw-Hill.

Campbell, J. P., McCloy, R. A., Oppler, S. H., & Sager, C. E. (1993). A theory of performance. In N. Schmitt & W. C. Borman (Eds.), *Personnel Selection in Organizations* (pp. 35-70). San Francisco, CA: Jossey Bass.

Caplan, R.D. (1987). Person-environment fit in organizations: Theories, facts, and values. In A.W. Riley & S.J. Zaccaro (Eds.), *Occupational stress and organizational effectiveness* (pp. 103–140). New York: Praeger.

Caporael, L. R. (2001). Evolutionary Psychology: Toward a Unifying Theory and a Hybrid Science. *Annual Review of Psychology*, *52*(1), 607-628.

Cattell, R. B. (1943). The description of personality: Basic traits resolved into clusters. *Journal of Abnormal and Social Psychology, 38*(4), 476-506.

Cattell, R.B. (1957). *Personality and motivation structure and measurement*. New York: World Book.

Cattell, R.B. (1973). *Personality and mood by questionnaire*. San Francisco: Jossey-Bass.

Cattell, R.B., Eber, H., & Tatsuoka, M. (1970). *Handbook for the 16PF Questionnaire*. Champaign: IPAT.

Cavalli-Sforza, L.L. (2000*).* *Genes, Peoples and Languages*. London: Penguin.

Cervone, D. (2004). The architecture of personality. *Psychological Review*, *111*(1), 183-204.

Chagnon, N.A. & Irons, W. (1979). *Evolutionary biology and human social behaviour: An Anthropological Perspective.* (Eds). North Scituate, MA: Duxbury.

Chamorro-Premuzic, T. (2007). *Personality and Individual Differences*. UK: BPS Blackwell.

Chamorro-Premuzic, T. (2011). *Personality and Individual Differences*. (2nd Ed). London: John Wiley & Sons.

Chamorro-Premuzic, (March 24, 2012). *The Unspoken Truth about Career Success: Suck Up and Keep your Boss Happy*. http://www.psychologytoday.com/blog/mr-personality/201203).

Chamorro-Premuzic, T. (2015a). The Engagement Epidemic: Why It Begins and Ends with Leadership. 10 September 2015. *HR Examiner*. Retrieved from http://www.hrexaminer.com/magazine/weekly/

Chamorro-Premuzic, T. (2015b). *The 4 Personality Traits of Engaging Leaders: How well you keep your team engaged is partly a matter of your own personality.* 'Hit the Ground Running". The Fast Company. 7 Oct 2015. www.thefastcompany.com. Retrieved from https://www.fastcompany.com/3051934/the-4-personality-traits-of-engaging-leaders.

Chamorro-Premuzic, T. (2016). Strengths-Based Coaching Can Actually Weaken You. *Harvard Business Review*. January 04, 2016. Retrieved from https://hbr.org/2016/01/strengths-based-coaching-can-actually-weaken-you.

Chamorro-Premuzic, T. & Furnham, A. (2010) *The Psychology of Personnel Selection*. Cambs: Cambridge University Press.

Chatman, J. (1989). Improving interactional organizational research: A model of person- organization fit. *Academy of Management Review*, *14*(3), 333-349.

Chatman, J. (1991). Matching People and Organizations: Selection and Socialization in Public Accounting Firms. *Administrative Science Quarterly*, *36*(3): 459-484.

Cheung, G.W., & Rensvold, R.B. (2002). Evaluating Goodness-of-Fit Indexes for Testing Measurement Invariance. *Structural Equation Modelling, 9*(2), 233-255.

Chidester, T.R., Helmreich, R.L., Gregorich, S.E., & Geis, C.E. (1991). Pilot personality and crew co-ordination. *International Journal of Aviation Psychology*, *1*(1), 25-44. In Hogan, R., Curphy, G.J. & Hogan, J. (1994) What we know about leadership: Effectiveness and personality. *American Psychologist*, *49*(6), 493-504.

Christian, M.S., Garza, A.S., & Slaughter, J.E. (2011). Work Engagement: A Quantitative Review a Test of Its Relations with Task and Contextual Performance. *Personnel Psychology*, *64*(1), 89-136.

Clifford, S., Jewell, R.M., & Waggoner, P.D. (2015). Are samples drawn from Mechanical Turk valid for research on political ideology? *Research & Politics*, *2*(4), 1-9. UK: Sage Journals.

Conger, J. A. (1990). The dark side of leadership. *Organizational Dynamics*, *19*(2): 44-55.

Connelly, B.S., & Ones, D.S. (2010). An Other Perspective on Personality: Meta-Analytic Integration of Observers' Accuracy and Predictive Validity. *Psychological Bulletin*, *136*(6), 1092-1122.

Connelly, B. S., & Hülsheger, U. R. (2012). A narrower scope or a clearer lens of personality? Examining sources of observers' advantages over self-reports for predicting performance. *Journal of Personality*, *80*(3) 603-631.

Connor-Smith, J.K. & Flachsbart, C. (2007). Relations between personality and coping: a meta-analysis. *Journal of Personality and Social Psychology, 93*(6),1080-1107.

Conway, J. M., & Huffcutt, A. I. (1997). Psychometric properties of multi-source performance ratings: A meta-analysis of subordinate, supervisor, peer, and self-ratings. *Human Performance, 10*(4*),* 331-360.

Cook, M. (2009). *Personnel Selection: Adding Value through People* (5th ed). New Jersey: Wiley-Blackwell.

Cooley, C.H. (1902). *The Looking Glass Self: Human Nature and the Social Order.* New York: Scribner's. (Revised Ed. 1922).

Cosmides, L., & Tooby, J. (1992). Cognitive adaptations for social exchange. In J. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 163-228). New York: Oxford University Press.

Cosmides, L., & Tooby, J. (1997). Dissecting the computational architecture of social inference mechanisms. In G. Bock & G. Cardeco (Eds.), *Characterizing human psychological adaptations* (Ciba Symposium No. 208, pp. 132–156). Chichester, UK: Wiley.

Green, C., Jegadeesh, N. & Tang, Y. (2009). Gender and Job Performance: Evidence from Wall Street. *Financial Analysts Journal, 65*(6), 65-78.

Cosmides, L., & Tooby, J. (1997). The Modular Nature of Human Intelligence. In A. B. Scheibel and J. W. Schopf (Eds.). *The Origin and Evolution of Intelligence* (pp. 71–101). Sudbury, MA: Jones & Bartlett.

Costa, P. T. Jr. & McCrae, R.R. (1980). Influence of extraversion and neuroticism on subjective well-being: happy and unhappy people. *Journal of Personality and Social Psychology 38*(4), 668-678.

Costa, P.T. Jr. & McCrae, R.R. (1985). *The NEO Personality Inventory Manual*. Odessa, FL: Psychological Assessment Resources.

Costa, P.T., Jr. & McCrae, R.R. (1988). From catalog to classification: Murray's needs and the five-factor model. *Journal of Personality and Social Psychology, 55*(2*),* 258–265.

Costa, P. T. Jr., & McCrae, R. R. (1992a). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five Factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources Inc.

Costa, P. T., Jr., & McCrae, R. R. (1992b). Normal personality assessment in clinical practice: The NEO Personality Inventory. *Psychological Assessment*, *4*(1), 5-13.

Costa, P.T. Jr. & Widiger, T.A. (1994). Personality Disorders and The Five-Factor Model of Personality. Washington, DC: *American Psychological Society*.

Costa, P.T. Jr. & McCrae, R.R. (1997). *Longitudinal Stability of Adult Personality*. Chapter 11. In Hogan, R., Johnson, J., & Briggs, S. (Eds). *Handbook of Personality Psychology*, (pp. 269-290). San Diego, CA: Academic Press.

Costa, P. T., Jr., & McCrae, R. R. (2006). Age changes in personality and their origins: Comment on Roberts, Walton, and Viechtbauer. *Psychological Bulletin, 132*(1), 26-28.

Crandall, J.E. (1981). *Theory and Measurement of Social Interest: Empirical Tests of Alfred Adler's Concept.* NY: Columbia University Press.

Credé, M., Harms, P., Niehorster, S., & Gaye-Valentine, A. (2012). An evaluation of the consequences of using short measures of the Big Five personality traits. *Journal of Personality and Social Psychology*, *102*(4), 874-888.

Creed, P. & Shackleton, V. (2007). *The Hogan Personality Inventory*. British Psychological Society, Psychological Testing Centre Test Reviews. Retrieved from https://ptc.bps.org.uk/test-registration-test-reviews/search-test-reviews.

Cropanzano, R. & Mitchell, M.S. (2005). Social Exchange Theory: An Interdisciplinary. *Journal of Management*, *31*(6) 874-900.

Cronbach, L. J. (1949). *Essentials of psychological testing*. New York: Harper.

Csikszentmihalyi, M. (1990). *Flow: The Psychology of Optimal Experience. New York:* Harper & Row.

Cushing, E. (2013). *Amazon Mechanical Turk: The Digital Sweatshop*. East Bay Express Jan/Feb 2013. Retrieved from http://www.utne.com/science-and-technology/amazon-mechanical-turk-zm0z13jfzlin.aspx.

Dawis, R.V. (1992). Person–environment fit and job satisfaction. In C.J. Cranny, P.C. Smith., & E.F. Stone (Eds.). *Job satisfaction* (pp. 69–88). New York: Lexington.

Dawis, R.V., & Lofquist, L.H. (1984). *A psychological theory of work adjustment.* Minneapolis: University of Minnesota Press.

Demerouti, E., Bakker, A.B., De Jonge, J., Janssen, P.P.M. & Schaufeli, W.B. (2001). Burnout and engagement at work as a function of demands and control. *Scandinavian Journal of Work, Environment and Health*, *27*(4), 279–86.

DeSoto, A. K. (2016). *Under the Hood of Mechanical Turk*. Association for Psychological Science, *Observer, 29*(3), March, 2016. Retrieved from https://www.psychologicalscience.org/observer/under-the-hood-of-mechanical-turk.

DeYoung, C. G. (2006). Higher-order factors of the Big Five in a multi-informant sample. *Journal of Personality and Social Psychology*, *91*(6), 1138-1151.

DeYoung, C. G., Peterson, J. B., & Higgins, D. M. (2002). Higher-order factors of the Big Five predict conformity: Are there neuroses of health? *Personality and Individual Differences, 33*(4), 533-552.

Digman, J. M. (1989). Five robust trait dimensions: Development, stability, and utility. *Journal of Personality*, *57*(2), 195-214.

Digman, J.M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology*, *41(1)*, 417-440.

Digman, J. M. (1997). Higher-order factors of the Big Five. *Journal of Personality and Social Psychology, 73*(6), 1246-1256.

Dinno, A. (2012). *paran: Horn's Test of Principal Components/Factors*. R package version 1.5.1. Retrieved from http://CRAN.R-project.org/package=paran.

Dobratz, B. A., & Shanks-Meile, S.L. (2000). *The White Separatist Movement in the United States*. Baltimore: Johns Hopkins University Press.

Durán, A., Extremera, N., & Rey, L. (2004). Engagement and burnout: analyzing their association patterns. *Psychological Reports, 94*(3), 1048–50.

Edwards, J. R. (2008). Person-environment fit in organizations: An assessment of theoretical progress. *The Academy of Management Annals*, *2*(1), 167-230.

Ehrhart, M. G., Ehrhart, K. H., Roesch, S. C., Chung-Herrera, B. G., Nadler, K., & Bradshaw, K. (2009). Testing the latent factor structure and construct validity of the Ten-Item Personality Inventory. *Personality and Individual Differences, 47*(8), 900-905.

Eibl-Eibesfeldt, I. (1989). *Human Ethology*. New York: Aldine de Gruyter. *American Journal of Physical Anthropology, 82*(2) 237-238.

Eisenberg, N. (2000). Emotion, Regulation and Moral Development. *Annual Review of Psychology*, *51*(1), 665–697.

Eldor, L. & Harpaz, I. (2016). A process model of employee engagement: The learning climate and its relationship with extra-role performance behaviours. *Journal of Organizational Behaviour*, *37*(2), 213-235.

Emmons, R.A. (1997). Motives and Life Goals. In R. Hogan, J. Johnson, & S. Briggs, (Eds). *Handbook of Personality Psychology*, (pp. 485-512). San Diego, CA: Academic Press.

Endler, N.S. (1982). Interactionism: A Personality Model, but not YET a Theory. Page, M.M. (Ed). *Nebraska Symposium on Motivation,* (pp. 155-200*)*. University of Nebraska Press.

Erdle, S., Irwing, P., Rushton, J. P., & Park, J. (2010). The General Factor of Personality and its relation to Self-Esteem in 628,640 Internet respondents. *Personality and Individual Differences*, *48*(3), 343-346.

Erez, A., & Judge, T. A. (2001). Relationship of core self-evaluations to goal setting, motivation, and performance. *Journal of Applied Psychology, 86*(6), 1270-1279.

Erikson, E.H. (1950). *Childhood and Society*. New York: Norton.

Erickson, T. J. (2005). Testimony Submitted Before the US Senate Committee on Health, May 26, 2005. *Education, Labor and Pensions*,. Retrieved from https://www.gpo.gov/fdsys/pkg/CHRG-109shrg21585/html/CHRG-109shrg21585.htm

Eriksson, K., & Simpson, B. (2012). What do Americans know about inequality? It depends on how you ask them. *Judgement and Decision Making, 7*(6), 741-745

Eysenck, H. J. (1967). *The biological basis of personality.* London: Hodder & Stoughton.

Eysenck, H. J. (1992). Four ways five factors are not basic. *Personality and Individual Differences, 13*(6), 667-673.

Eysenck, H. J. (1997). *Dimensions of personality*. New Brunswick, NJ: Transaction Publishers.

Eysenck, M.W. (1998). *Individual Differences – Normal and Abnormal*. Hove: Psychology Press.

Eysenck, H. J. & Eysenck, S. B. G. (1969). *Personality Structure and Measurement*. Abingdon, UK: Routledge.

Eysenck, H. J., & Eysenck, S. B. G. (1976). *Psychoticism as a dimension of personality.* New York: Crane, Russak & Co.

Eysenck, H. J., & Eysenck, M.W. (1985). *Personality and Individual Differences*. New York: Plenum.

Fairchild, H. H. (1991). Scientific Racism: The Cloak of Objectivity. *Journal of Social Issues*, *47*(3), 101–115.

Fehr, E., & Gächter, S., (2000). Fairness and Retaliation: The Economics of Reciprocity. *Journal of Economic Perspectives, 14*(3): 159–181.

Feltham, R. & Loan-Clarke, J. (2007). *Hogan's Motives, Values and Preferences Inventory.* British Psychological Society, Psychological Testing Centre Test Reviews. Retrieved from https://ptc.bps.org.uk/sites/ptc.bps.org.uk/files/Documents/Guidelines%20and%20Information/PTC09%20Code%20of%20good%20practice.pdf

Ferguson, E., Chamorro-Premuzic, T., Pickering, A., & Weiss, A. (2011). Five into one doesn't go: A critique of the general factor of personality. In Chamorro-Premuzic, T., von Stumm, S., & Furnham, A. (2011). (Eds.). *Handbook of individual differences*, (pp.162-186). Oxford: Wiley-Blackwell.

Field, A. *Discovering Statistics Using SPSS* (2009). 3rd Ed. London: Sage Publications.

Fishbach, A., Henderson, D. H., & Koo, M. (2011). Pursuing goals with others: Group identification and motivation resulting from things done versus things left undone. *Journal of Experimental Psychology: General*, *140*(3), 520-534.

Fort, K., Adda, G., Sagot, B., Mariani, J., & Couillault, A. (2014). Crowdsourcing for Language Resource Development: Criticisms About Amazon Mechanical Turk Overpowering Use. In, V. Zygmunt, & M. Joseph. (Eds). *Human Language Technology Challenges for Computer Science and Linguistics,* (pp. 303-314). London: Springer International Publishing.

Foster, J., Johnson, C., & Gaddis, B. (2008). The Predictive Validity of Personality: New Methods Produce New Results. *The 23rd annual conference of the Society for Industrial-Organizational Psychology*, April, 2008. San Francisco, CA. Retrieved from http://www.hoganassessments.com/wp-content/uploads/2016/02/Bibliography_20150615.pdf

Frankl, V. E. (2006). *Man's Search for Meaning*. An Introduction to Logotherapy. Boston, MA: Beacon Press.

Franklin, S.B., Gibson, D.J., Robertson, P.A., Pohlmann, J.T. & Fralish, J.S. (1995). *Parallel Analysis: a Method for Determining Significant Principal Components*. Journal of Vegetation Science, *6*(1), 98-106.

Fredrickson, B.L. (2004). Gratitude, like other positive emotions, broadens and builds. In R.A. Emmons, & M.E. McCullough (Eds). *The Psychology of Gratitude,* (pp.145–166). New York: Oxford University Press.

French, J. R. P., Jr., Rodgers, W. L., & Cobb, S. (1974). Adjustment as person-environment fit. In G. Coelho, D. Hamburg, & J. Adams (Eds.). *Coping and adaptation,* (pp. 316-333). New York: Basic Books.

French, J. R. P., Jr., Caplan, R. D., & Harrison, R. V. (1982). *The mechanisms of job stress and strain*. London: Wiley.

Freud, S. (1923). The Ego and the Id. *The Standard Edition of the Complete Psychological Works of Sigmund Freud,* Volume XIX (1923-1925): The Ego and the Id and Other Works, 1-66 Retrieved from http://icpla.edu/wp-content/uploads/2012/10/Freud-S.-The-Ego-and-The-Id.pdf

Fromm, E. (1947). *Man For Himself. An inquiry into the psychology of ethics*. Greenwich, Conn.: Fawcett Premier.

Fugard, A. (2010). *Correlation Structure of the big 5, huge 2 and general 1*, June 9. https://figuraleffect.wordpress.com/2010/06/09/correlation-structure-of-the-big-5-huge-2-and-general-1/.

Funder, D.C. (1995). On the accuracy of personality judgment: A realistic approach. *Psychological Review*, *102*(4), 652-670.

Funder, D.C. (2001). Personality. *Annual Review of Psychology, 52*(1), 197-221.

Funder, D.C. (2011). President's Column: *The Online Newsletter for Personality Science.* Issue 6; November 2011. Retrieved from http://www.personality-arp.org/html/newsletter06/president.html.

Funder, D.C., & Sneed, C.D. (1993). Behavioural manifestations of personality: An ecological approach to judgemental accuracy. *Journal of Personality and Social Psychology, 64*(3), 479-490.

Furnham, A. (1986). Response bias, social desirability and dissimulation. *Personality and Individual Differences, 7*(3), 385-400.

Furnham, A. (1991). Personality and occupational success: 16PF correlates of cabin crew performance. *Personality and Individual Differences*, *12*(1), 87-90.

Furnham, A. (1997). *The Psychology of Behaviour at Work: The Individual in the Organization.* London: Psychology Press: Taylor & Francis.

Furnham, A. (1998). *The Psychology of Managerial Incompetence*. London: Whurr Publishers Ltd.

Furnham, A. (2008). Relationship among four big five measures of different length. *Psychological Reports, 102*(1), 312-316.

Furnham, A., & Crump, J. (2005). Personality Traits, Types and Disorders: An Examination of the Relationship Between Three Self-Report Measures. *European Journal of Personality, 19*(3), 167–184.

Furnham, A., & Heaven, P. (1999). Personality and Social Behaviour. UK: Arnold.

Furnham, A., Hyde, G. & Trickey, G. (2013). The values of work success. *Personality and Individual Differences 55*(5), 485-489.

Furnham, A., Hyde, G., & Trickey, G. (2014a). Do your Dark Side Traits Fit? Dysfunctional Personalities in Different Work Sectors. *Applied Psychology, 63*(4)589-606.

Furnham, A., Hyde, G., & Trickey, G. (2014b). The dark side of career preference: dark side traits, motives, and values. *Journal of Applied Social Psychology*. *44*(2), 106-114.

Furnham, A., Richards, S.C., & Paulhus, D.L. (2013). The Dark Triad of Personality: A 10 Year Review. *Social and Personality Psychology Compass, 7*(3) , 199–216. Oxford: John Wiley & Sons.

Furnham, A., & Taylor, J. (2004). *The Dark Side of Behaviour at Work: Understanding and Avoiding Employees Leaving, Thieving and Deceiving*. UK: Palgrave Macmillan.

Furnham, A., Trickey, G., Hyde, G. (2012). Bright aspects to dark side traits: Dark side traits associated with work success. *Personality and Individual Differences*, *52*(8), 908-913.

Gallup Employment Engagement Survey (2015). *State of the American Workforce Report.* Retrieved from http://www.gallup.com/topic/employee_engagement.aspx

Gardner, H. (1993). *Multiple Intelligences: The Theory in Practice*. New York: Basic Books.

Garrad, L., & Chamorro-Premuzic, T. (2016). The Dark side of High Employee Engagement. *Harvard Business Review*. Retrieved from https://hbr.org/2016/08/the-dark-side-of-high-employee-engagement

Giammarco, E. A., Atkinson, B., Baughman, H. M., Veselka, L., & Vernon, P. A. (2013). The relation between antisocial personality and the perceived ability to deceive. *Personality and Individual Differences*, *54*(2*)*, 246-250.

Goffman, E. (1959). *The Presentation of Self in Everyday Life*. UK: Anchor Books.

Goldberg, L. R. (1990). An alternative "description of personality": The Big-Five factor structure. *Journal of Personality and Social Psychology*, *59*(6). 1216-1229.

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment, 4*(1)*,* 26-42.

Goldberg, L.R. (1993). The structure of phenotypic personality traits. *American Psychologist, 48*(1), 26-34.

Goldberg, L. R. (1999). A broad-bandwidth, public domain, personality inventory measuring the lower-level facets of several five-factor models. In I. Mervielde, I. Deary, F. De Fruyt, F, & F. Ostendorf, (Eds.). *Personality Psychology in Europe*, *Vol.7,* 7-28. Tilburg, The Netherlands: Tilburg University Press.

Goldberg, L. R. (2005). A scientific collaboratory for the development of advanced measures of personality traits and other individual differences. In L. R. Goldberg (Chair), *The International Personality Item Pool and the Future of Public-Domain Personality Measures.* Presidential Symposium at the sixth annual meeting of the Association for Research in Personality, January 20th 2005, New Orleans.

Goldberg, L. R. (2008). *The Eugene-Springfield community sample: Information available from the research participants*. (Tech. Rep. Vol. 48, No. 1). Eugene, OR:

Oregon Research Institute. Retrieved from http://ipip.ori.org/ORI_TechnicalReport_ESCS_Mar08.pdf

Goldberg, L. R. (2000). Hogan Personality Inventory and NEO PI-R correlation coefficients. Unpublished raw data based on International Personality Item Pool Project. Retrieved from http://www.hoganassessments.com/sites/default/files/uploads/Criterion%20Tech%20Report%20Sample%20%282%29.pdf

Goldberg, L.R., Johnson, J.A., Eber, H.W., Hogan, R., Ashton, M.C., Cloninger, C.R., & Gough, H.G. (2006). The international personality item pool and the future of public-domain personality measures. *Journal of Research in Personality, 40*(1) 84–96.

Gómez, A., Brooks, M.L., Buhrmester, M., Vázquez, A., Jetten, J., & Swann, W.B. (2011). On the nature of identity fusion: Insights into the construct and validation of a new measure. *Journal of Personality and Social Psychology, 100*(5), 918-33.

Goldberg, L. R. & Saucier, G., (1995). So what do you propose we use instead? A reply to Block. *Psychological Bulletin, 117*(2), 221-225.

Goodman, J.K., Cryder, C.E., & Cheema, A. (2012). Data Collection in a Flat World: Strengths and Weaknesses of Mechanical Turk Samples. *Journal of Behavioral Decision Making, 26*(3), 213–224.

Gorgievski, M., Bakker, A., Schaufeli, B. (2009). Work engagement and workaholism: comparing the self-employed and salaried employees. *The Journal of Positive Psychology*, *5*(1), 83-96.

Gosling, S. D., Rentfrow, P. J., & Swann, W. B., Jr. (2003). A Very Brief Measure of the Big Five Personality Domains. Jo*urnal of Research in Personality*, *37*(6), 504-528.

Graber, S. (2015). *HBR: Motivating People: The Two sides of Employee Engagement.* Sean Graber, 4 December, 2015. Retrieved from https://hbr.org/2015/12/the-two-sides-of-employee-engagement.

Grayson, K., & Rust, R. (2001). Interrater reliability. *Journal of Consumer Psychology*, *10*(1 & 2), 71-73.

Graves, J. L. (2002). What a tangled web he weaves: Race, reproductive strategies and Rushton's life history theory. *Anthropological Theory*, *2*(2), 131–154.

Griffin, B., & Hesketh, B. (2004). Why Openness to Experience is not a Good Predictor of Job Performance. *International Journal of Selection and Assessment*, *12*(3), 243–251.

Guenole, N. (2014). Maladaptive Personality at Work: Exploring the Darkness. *Industrial and Organizational Psychology: Perspectives on Science and Practice*. *7*(1), 85-97.

Guest, D. (2011). Human Resource Management and performance: still searching for some answers. *Human Resource Management Journal*, *21*(1), 3-13.

Hackman, J.R., & Oldham, G.R. (1980). *Work redesign.* Reading, MA: Addison-Wesley.

Hallberg, U. E., & Schaufeli, W. B. (2006). "Same, same" but different? Can work engagement be discriminated from job involvement and organizational commitment? *European Psychologist*, *11*(2), 119-127.

Harris, M.M. & Schaubroeck, J. (1988). A Meta-Analysis of Self-Supervisor, Self-Peer and Peer-Supervisor Ratings. *Personnel Psychology*, *41*(1), 43-62.

Harter, J., Schmidt, F., & Hayes. T. (2002). Business-unit-level relationship between employee satisfaction, employee engagement and business outcomes: a meta-analysis. *Journal of Applied Psychology, 87*(2), 268-279.

Hazucha, J.F. (1991). Success, jeopardy and performance: Contrasting managerial outcomes and their predictors. Unpublished doctoral dissertation, University of Minnesota, Minneapolis. In R. Hogan, G.J. Curphy, & J. Hogan, (1994) What we know about leadership: Effectiveness and personality. *American Psychologist*, *49*(6), 493-504.

Heidemeier, H. (2005). *Self and supervisor ratings of job-performance: Meta-analyses and a process model of rater convergence*. Dissertation, Universität Erlangen-Nürnberg, Wirtschafts- und Sozialwissenschaftliche Fakultät, Nürnberg. Retrieved from http://www.zpid.de/psychauthors/index.php?wahl=forschung&uwahl=psychauthors&uuwahl=p07205HH_pub

Heller, D., Judge, T. A., & Watson, D. (2002). The confounding role of personality and trait affectivity in the relationship between job and life satisfaction. *Journal of Organizational Behavior, 23*(7*),* 815-835.

Hendriks, A. A. J. (1997). *The construction of the five-factor personality inventory (FFPI)*. Academisch proefschrift, Rijksuniversiteit Groningen, The Netherlands. Retrieved from http://ipip.ori.org/HistoryOfTheIPIP.htm.

Hendriks, A. A. J., Hofstee, W. K. B., & de Raad, B. (2002). The Five-Factor Personality Inventory: Assessing the Big Five by means of brief and concrete statements. Personality and Individual Differences, 27(2) 307-325

Hills, P., & Argyle, M. (2001). The Oxford Happiness Questionnaire: a compact scale for the measurement of psychological well-being. *Personality and Individual Differences* 33(7) 1073-1082.

Hinkin, T.R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Method*s, 1(1), 104-121.

Hjort, P. F. (1997). *Age or Work: Good or Bad for whom?* Arbete och Hälsa. In: Work after 45? : proceedings from a scientific conference held in Stockholm 22-25

September 1996. *1*(29), 3-12. Retrieved from https://brage.bibsys.no/xmlui/handle/11250/2378172.

Hofmans, J., Kuppens, P., & Allik, J. (2008). Is short in length short in content? An examination of the domain representation of the Ten Item Personality Inventory scales in Dutch language. *Personality and Individual Differences, 45*(8), 750-755.

Hofstee, W. K. B. (2001). Intelligence and personality: Do they mix? In S. Messick & J. M. Collis (Eds.), *Intelligence and personality: Bridging the gap in theory and measurement.* (pp. 43–60). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Hogan Assessment Systems – HAS (2009). *The development of the Hogan Competency Model.* Tulsa, OK: Hogan Research Division ©Hogan Assessment Systems Inc. Retrieved from http://www.hoganassessments.com.

Hogan Assessment Systems – HAS (2012). *Gender Differences on the HPI, HDS, and MVPI. Analysis of Adverse Impact for the Hogan Personality Inventory, Hogan Development Survey, and the Motives, Values, Preferences Inventory: Documentation of Psychometric and Research Evidence.* Tulsa, OK: Hogan Research Division © Hogan Assessment Systems Inc. Retrieved from http://www.hoganassessments.com/wp-content/uploads/2016/02/Research20QA20Gender20Differences20Edited.pdf

Hogan, R. (1975). Theoretical egocentrism and the problem of compliance. *American Psychologist 30*(5), 533-40

Hogan, R. (1976). *Personality Theory: The Personological Tradition*. NJ: Prentice Hall.

Hogan, R. (1983). A socioanalytic theory of personality. In M. M. Page (Ed.), *1982 Nebraska Symposium on Motivation* (pp. 55–89). Lincoln: University of Nebraska Press.

Hogan, R. (1991). Personality and personality measurement. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (Vol. 2, 2nd Ed.), (pp. 327-396). Palo Alto, CA: Consulting Psychologists Press.

Hogan, R. (2005). In Defense of Personality Measurement: New Wine for Old Whiners, *Human Performance*, 18(4), 331-341.

Hogan, R. (2007). *Personality and the Fate of Organizations*. NY: Psychology Press: Taylor & Francis.

Hogan, R. (2008). *How Faking Impacts Personality Assessment Results*. April 2008. Hogan Assessment Systems, Tulsa. Retrieved from http://www.hoganassessments.com/how-faking-impacts-personality-assessment-results/

Hogan, R. (2011). *Keynote Talk on Personality and Individual Differences*. International Society for Study of Individual Differences Conference. London: Institute of Education, London. Personal notes.

Hogan, R. (2014). Private e-mail communication.

Hogan, J., Barrett, P., & Hogan, R. (2007). Personality Measurement, Faking, and Employment Selection. *Journal of Applied Psychology.* , 92(5), 1270–1285.

Hogan, R., & Benson, M. J. (2009). Personality theory and positive psychology: Strategic self-awareness. In R. B. Kaiser (Ed.), *The perils of accentuating the positive* (pp. 115-134). Tulsa, OK: Hogan Press.

Hogan, R., & Blake, R. (1996). Vocational interests: Matching self-concept with the work environment. In K.R. Murphy (Ed.), *Behaviour in Organizations* (pp. 89-144). San Francisco: Jossey-Bass.

Hogan, R. & Briggs, S.R. (1986). A Socio-analytic Interpretation of the Public and Private Selves. In R.F. Baumeister, (Ed) *Public Self and Private Self*. NY: Springer-Verlag.

Hogan, R., & Chamorro-Premuzic, T. (2015a). *Personality and Career Success*. In M.Mikulincer; P.R. Shaver; M.L. Cooper; & R.J. Larsen, (Eds). *APA Handbook of*

Personality and social Psychology, Vol. 4, Personality Processes and Individual differences. APA Handbooks in Psychology (pp. 619-638). Washington, DC, US: American Psychological Association.

Hogan, R., & Chamorro-Premuzic, T. (2015b). *Beyond The Hype: The Dark Side of Employee Engagement*. Tulsa, OK: Hogan Research Division. Retrieved from http://www.hoganassessments.com/sites/default/files/uploads/Engagement%20Symposium.pdf

Hogan, R., Curphy, G.J. & Hogan, J. (1994). What we know about leadership: Effectiveness and personality. *American Psychologist*, *49*(6), 493-504.

Hogan, R., & Fico, J. (2011). *Leadership*. In W. K. Campbell & J. D. Miller 2011. (Eds.) *The Handbook of Narcissism and Narcissistic Personality Disorder: Theoretical Approaches, Empirical Findings, and Treatments* (pp. 210-220). NY: Wiley & Sons.

Hogan, R., & Foster, J. (2016). Rethinking Personality. *International Journal of Personality Psychology*, 2(1), 37-43.

Hogan, R., & Gerhold, C. (1995). *Development and validation of an employee selection test for financial consultants.* Tulsa, OK: Hogan Assessment Systems.

Hogan, J., & Hogan, R. (1996). *Motives, values, preferences inventory manual.* Tulsa, OK: Hogan Assessment Systems.

Hogan, R., & Hogan, J. (1991). Personality and Status. In D.G. Gilbert & J.J. Connolly (Eds). *Personality, social skill and psychopathology: An Individual Differences Approach, (pp 137-154).* New York: Plenum.

Hogan, R., & Hogan, J. (1997). *Hogan Development Survey Manual*, UK Edition., Tunbridge Wells, Kent: Psychological Consultancy Ltd.

Hogan, R., & Hogan, J. (2001). Assessing leadership. A view from the dark side. *International Journal of Selection and Assessment*, 9(1-2), 40–51.

Hogan, R., & Hogan, J. (2007). *Hogan Personality Inventory Manual* (3rd Edition) Tulsa, OK: Hogan Assessment Systems.

Hogan, J., & Hogan, R. (2009). *Hogan Development Survey Manual* (2nd Edition) Tulsa, OK: Hogan Assessment Systems.

Hogan, J., & Hogan, R. (2010). *Motives, Values, Preferences Inventory Manual* (2nd Edition). Tulsa, OK: Hogan Assessment Systems.

Hogan, J., & Hogan, R. (2013). *The HPI Technical Manual: Validity of the Hogan Personality Inventory for the Sales BASIS - Documentation of Evidence for Validity Generalization.* (August, 2015). @Hogan Assessment Systems. Retrieved from http://mentisglobal.com/wp-content/uploads/Hogan_Secure_Zone/6.%20Technical%20Manuals/2.%20Hogan%20Report%20Manuals/Leader%20BASIS_Technical%20Manual.pdf

Hogan, R., Hogan, J., & Roberts, B.W. (1996) Personality measurement and employment decisions. *American Psychologist*, *51*(5), 469-477.

Hogan, R., Hogan, J., & Warrenfeltz, R. (2007). *The Hogan Guide: Interpretation and use of Hogan Inventories.* Tulsa, OK: Hogan Press. Retrieved from http://www.hoganassessments.com/sites/default/files/HPI%20Tech%20Manual%20-%20S.pdf

Hogan, R., Johnson, J., & Briggs, S. (Eds). (1997). *Handbook of personality psychology.* San Diego, CA: Academic Press.

Hogan, J., & Holland, B. (2003). Using theory to evaluate personality and job-performance relations: A socio-analytic perspective. *Journal of applied Psychology*, *88*(1),100-112.

Hogan, R., Jones, W., & Cheek, J. M. (1985). Socioanalytic theory: An alternative to armadillo psychology. In B. R. Schlenker (Ed.). *The self and social life,* (pp. 175–198). New York: McGraw-Hill.

Hogan, J., & Ones, D.S (1997). *"Conscientiousness and integrity at work"*, Chapter 32. In R. Hogan, J. Johnson, & S. Briggs, S. (Eds). *Handbook of Personality Psychology*, (pp. 849-72). San Diego, CA: Academic Press.

Hogan, R., Raskin, R., & Fazzini, D. (1990). The dark side of charisma. In K. E. Oark & M. B. Clark (Eds.), *Measures of Leadership* (pp. 343-354). West Orange, NJ: Leadership Library of America.

Hogan, J., & Roberts, B. W. (1996). Issues and non-issues in the fidelity-bandwidth trade-off. *Journal of Organizational Behavior*, *17*(6), 627-637.

Hogan, R., & Roberts, B. W. (2001). Personality and I/O psychology. In B. W. Roberts & R. T. Hogan (Eds.), *Personality psychology in the workplace* (pp. 3–18). Washington, DC: American Psychological Association.

Hogan, J., Rybicki, S., Motowidlo, S. J., & Borman, W. C. (1998). Relations between contextual performance, personality, and occupational advancement. *Human Performance*, *11*(2-3), 189-207

Hogan, R., & Shelton, D. (1998). A Socio-analytic Perspective on Job Performance. *Human Performance,* 11(2-3), 129-144.

Hogan, R., & Smither, R. (2001). *Personality: Theory and Application.* Boulder, CO: Westview Press.

Holland, J. L. (1966). *The psychology of vocational choice: A theory of personality types and model environments*. Waltham, Mass: Blaisdell Pub. Co.

Holland, J.L. (1985). *Making vocational choices: A theory of vocational personalities and work environments*. (2nd Edition). Englewood Cliffs. NJ: Prentice Hall.

Holland, J.L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd Edition). Odessa, FL: Psychological Assessment Resources.

Holland, B., & Hogan, J. (1999). *Validity of the Hogan Personality Inventory for selecting clerical support aides II and III* (Tech. Rep. No. 167). Tulsa, OK: Hogan Assessment Systems. Retrieved from http://www.hoganassessments.com/sites/default/files/uploads/Criterion%20Tech%20Report%20Sample%20%282%29.pdf

Holmes, M. (2010). The Validity of the TIPI: A Study to investigate the reliability and validity of the 10 item personality inventory when compared with two robust infantries within a British example. *MMU Psychology Journal.* https://e-space.mmu.ac.uk/576699/

Horney, K. (1937). *The Neurotic Personality of our time*. NY: W.W. Norton & Co.

Horney, K. (1939). *New Ways in Psychoanalysis*. UK: Routledge & Kegan Paul.

Horney, K. (1942). *Self-Analysis*. NY: W.W. Norton & Co.

Horney, K. (1945). *Our Inner Conflicts*. NY: W.W. Norton & Co.

Horney, K. (1950). *Neurosis and human growth: The struggle towards self-realization*. London, UK: W.W. Norton & Co.

Hough, L.M., & Furnham, A. (2003). *Use of Personality Variables in Work Settings*. In W. Borman, O. Ilgen, & R. Klimoski (Eds). Handbook of Psychology (Vol.12), (pp.131-169). New York: Wiley.

House, R.J., Shane, S.A., & Herold, D.M. (1996). Rumours of the death of dispositional research are vastly exaggerated. *Academy of Management Review*, 21(1), 203-224.

Hoyle, R. H. (1995). The structural equation modeling approach: Basic concepts and fundamental issues. In *Structural equation modeling: Concepts, issues, and applications,* R. H. Hoyle (Ed.), (pp 1-15). Thousand Oaks, CA: Sage Publications.
International Personality Item Pool. Retrieved from *IPIP* www.ipi.ori.org

International Test Commission (2014). ITC Statement On the Use of Tests and Other Assessment Instruments for Research Purposes. International Test Commission (ITC) ©2014. Document reference: ITC-S-TU-20140410. Retrieved from https://www.intestcom.org/files/statement_using_tests_for_research.pdf

International Test Commission (2010). International Guidelines for Translating and Adapting Tests. Retrieved from https://www.intestcom.org/files/guideline_test_adaptation.pdf

Isaacson, W. (2008). *Einstein: His Life and Universe*. NY: Simon & Schuster Ltd.

Jessup, G. & Jessup, H. (1971). Validity of the Eysenck Personality Inventory in Pilot Selection. *Occupational Psychology*, *45*(2) 111–123.

John, O.P. & Robins, R.W. (1993). Determinants of interjudge agreement: The Big Give, observability, evaluativeness, and the unique perspective of the self. *Journal of Personality*, *61*(4), 521-551.

Johnson, J. A. (2005). The good, the bad, and the ugly: The IPIP consultant's experiences recounted. In L. R. Goldberg (Chair), *The international personality item pool and the future of public-domain personality measures. Presidential symposium at the sixth annual meeting of the association for research in personality,* January 20, 2005. New Orleans, January. Retrieved from http://projects.ori.org/lrg/PDFs_papers/Goldberg_et_al_inpress_JRP.pdf

Johnson, J. A. (2014). Measuring thirty facets of the Five Factor Model with a 120-item public domain inventory: Development of the IPIP-NEO-120. *Journal of Research in Personality, 51(August 2014)*, 78-89.

Johnson, D.R., & Borden, L.A. (2012). Participants at Your Fingertips: Using Amazon's Mechanical Turk to Increase Student-Faculty Collaborative Research. *Teaching of Psychology, 39*(4), 245-251.

Jonason, P.K., Slomski, S., & Partyka, J. (2012). The Dark Triad at work: How toxic employees get their way. *Personality and Individual Differences*, *52*(3), 449-453.

Jonason, P.K., Teicher, E.A., & Schmitt, D.P. (2011). The TIPI's validity confirmed: Associations with mating strategies and self-esteem. *Individual Differences Research*, *9*(1), 52-60.

Jones, W. H., Couch, L., & Scott, S. (1997). *Trust and betrayal: The psychology of getting along and getting ahead.* In R. Hogan, J. Johnson, & S. Briggs, S. (Eds). *Handbook of Personality Psychology*, (pp. 465-482). San Diego, CA: Academic Press.

Jones, D.N., & Paulhus, D.L. (2014). Introducing the Short Dark Triad (SD3): A Brief Measure of Dark Personality Traits. *Assessment*, *21*(1), 28–41.

Judd, C. M., McClelland, G. H., & Ryan, C. S. (2009). *Data Analysis: A Model Comparison Approach.* New York: Routledge.

Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits - self-esteem, generalized self-efficacy, locus of control, and emotional stability - with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology, 86*(1), 80-92.

Judge, T. A., Bono, J. E., Erez, A., & Locke, E. A. (2005). Core self-evaluations and job and life satisfaction: the role of self-concordance and goal attainment. *Journal of Applied Psychology, 90*(2), 257-268.

Judge, T. A., Bono, J. E., Ilies, R., & Gerhardt, M. (2002). Personality and leadership: A qualitative and quantitative review. *Journal of Applied Psychology*, *87*(4), 765-780.

Judge, T. A., Bono, J. E., & Locke, E. A. (2000). Personality and job satisfaction: The mediating role of job characteristics. *Journal of Applied Psychology*, *85*(2), 237-249.

Judge, T.A., Erez, A., Bono, J.E., & Thoresen, C.J. (2002). Are Measures of Self-Esteem, Neuroticism, Locus of Control and Generalized Self-Efficacy Indicators of a Common Core Construct? *Journal of Personality and Social Psychology*, *83*(3), 693-710.

Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2003). The Core Self-Evaluations Scale (CSES): Development of a measure. *Personnel Psychology, 56*(2*),* 303-331.

Judge, T.A., Heller, D., & Mount, M.K. (2002). Five-Factor Model of Personality and Job Satisfaction: A Meta-analysis. *Journal of Applied Psychology*, *87*(3), 530-541.

Judge, T. A., & Ilies, R. (2002). Relationship of personality to performance motivation: A meta-analytic review. *Journal of Applied Psychology, 87*(4), 797-807.

Judge, T.A. & Kammeyer-Mueller, J.D. (2007). Personality and Career Success. In H.P. Gunz, & M.A. Peiperl, (Eds). *Handbook of Career Studies* (pp. 59-78). Thousand Oaks, CA: Sage Publications.

Judge, T. A., Kammeyer-Mueller, J. D., & Bretz, R. D. (2004). Longitudinal models of sponsorship and career success: A study of industrial-organizational psychologists. *Personnel Psychology, 57*(2), 271-303.

Judge, T.A., Le Pine, J.A., & Rich, B.L. (2006). Loving Yourself Abundantly: Relationship of the Narcissistic Personality to Self- and Other Perceptions of Workplace Deviance, Leadership, and Task and Contextual Performance. *Journal of Applied Psychology,* 91(4), 762–776.

Judge, T.A., Locke, E.A., & Durham, C.C. (1997). The dispositional causes of job satisfaction: A core evaluations approach. *Research in Organizational Behavior 19*(1), 151-188.

Judge, T.A., Locke, E.A., Durham, C.C., & Kluger, A.N. (1998). Dispositional effects on job and life satisfaction: The role of core evaluations. *Journal of Applied Psychology*, *83*(1), 17-34.

Judge, T.A., Piccolo, R.F., & Kosalka, T. (2009). The bright and dark sides of leader traits: A review and theoretical extension of the leader trait paradigm. *Leadership Quarterly*, *20*(6), 855–875.

Jung. C.G. (1951). *Aion*. (2nd Ed.) Princeton: Bollingen Press.

Kahn, W. (1990). Psychological Conditions of Personal Engagement and Disengagement at Work. *Academy of Management Journal, 33*(4), 692–724.

Kaiser, H.F. (1970). A second generation little jiffy. *Psychometrika, 35*(4), 401–415.

Kaiser, R.B., & Hogan, J. (2011). Personality, leader behaviour, and overdoing it. *Consulting Psychology Journal: Practice and Research*, *63*(4), 219-242.

Katzell, R. A. (1964). Personal values, job satisfaction, and job behaviour. In H. Borow (Ed). *Man in a world of work*, (pp. 341-363). Boston: Houghton Mifflin.

Kellett, J.B., Humphrey, R.H., & Sleeth, R.G. (2006). Empathy and the emergence of task and relations leaders. *Leadership Quarterly*. *17*(2):146-162.

Kets de Vries, M.F.R. (1989). Leaders who self-destruct: The causes and cures. *Organizational Dynamics*, *17*(4) 5-17.

Kets de Vries, M.F.R. (1999). Managing Puzzling Personalities: Navigating between 'Live Volcanoes' and 'Dead Fish'. *European Management Journal*, *17*(1) 8-19.

Kets de Vries, M. F.R. & Miller, D.L. (1984). *The Neurotic Organiszation: Diagnosing and Changing Counterproductive Styles of Management.* California: Jossey-Bass Inc.

Kerlinger, F. (1986). *Foundations of Behavioural Research* (3rd ed). New York: Holt, Rinehart & Winston.

Kilduff, M., Chiaburu, D.S., Jochen, I., & Menges, J. I. (2010). Strategic use of emotional intelligence in organizational settings: Exploring the dark side. *Research in Organizational Behavior*, 30(4), 129-152.

Kim, W., Kolb, J.A., & Kim, T. (2012). The Relationship Between Work Engagement and Performance. *Human Resource Development Review, 12*(3), 248 – 276.

Kim, H. J., Shin, K. H., & Swanger, N. (2009). Burnout and engagement: A comparative analysis using the Big Five personality dimensions. *International Journal of Hospitality Management, 28*(1), 96-104.

Kline, P. (2000). *The Handbook of Psychological Testing,* (2nd Edition). Abingdon, UK: Routledge.

Kline, R. B. (2005). *Principles and Practice of Structural Equation Modelling*. London: The Guilford Press.

Kobasa, S.C. (1979). Stressful life events, personality and hardiness: an enquiry into hardiness. *Journal of Personality and Social Psychology*, *37*(1), 1-11.

Kohut, H. (1972). Thoughts on narcissism and narcissistic rage. *The Psychoanalytic Study of the Child, 27*(1), 360-399.

Khoo, H. S., & Burch, G. St. J. (2008). The 'dark side' of leadership personality and

transformational leadership: An exploratory study. *Personality and Individual Differences, 44(1),* 86-97.

Korn, E.R., Pratt, G.J., & Lambrou, P.T. (1987). *Hyper-performance: The A.I.M. Strategy for Releasing your Business Potential.* New York: John Wiley.

Kristof-Brown, A.L., & Guay, R. P. (2011). Person–environment fit. APA Handbook of Industrial and Organizational psychology, (pp, 3-50). APA Books: USA.

Kristof-Brown, A.L., Zimmerman, R.D., & Johnson, E.C. (2005). Consequences of individuals' fit at work: A meta-analysis of person–job, person–organization, person–group, and person–supervisor fit. *Personnel Psychology*, *58*(2), 281–342.

Krosnick, J.A., & Berent, M.K., (1993). Comparisons of Identification and Policy Preferences: The Impact of Survey Question Format. *American Journal of Political Science, 37*(3), 941-964.

Krosnick, J. A., & Fabrigar, L. R. (1997). *Designing rating scales for effective measurement in surveys.* In L. Lyberg, P. Biemer, M. Collins, L. Decker, E. DeLeeuw, C. Dippo, N. Schwarz, and D. Trewin (Eds.). *Survey Measurement and Process Quality, (pp. 146-164).* New York: Wiley-Interscience.

Kusch, R.I., Moser, P., & Kassner, M. (2012). Developing Station Managers with Personality and Leadership Assessments. *Annual Conference of the Society of Industrial and Organizational Psychology (*SIOP) April 26-28, 2012. San Diego, California.

Landy, R.J. (1994). *Drama Therapy: Concepts, Theories and Practices*. (2nd Edition). Springfied, IL: Charles C. Thomas Publisher.

LaRossa, R., & Reitzes, D.C. (1993). Symbolic interactionism and family studies. In P. G. Boss., W. J. Doherty., R. LaRossa., W. R. Schumm., & S. K. Steinmetz (Eds.), *Sourcebook of family theories and methods: A contextual approach* (pp. 135-163). New York: Plenum Press.

Lasch, C. (1984). *The Minimal Self: Psychic Survival in Troubled Times*. UK: Norton & Co.

Leary, M.R., & Kowalski, R.M. (1990). Impression Management: A literature review and two-component model. *Psychological Bulletin*, *107*(1), 34-47.

Lewontin, R.C., Rose, S., & Kamin, L.J. (1984). *Not In Our Genes: Biology, Ideology and Human Nature*. NY: Pantheon Books.

Li, A, & Bagger, J. (2006). Using the BIDR to distinguish the effects of impression management and self-deception on the criterion validity of personality measures: A meta-analysis. *International Journal of Selection and Assessment, 14*(2), 131-141.

Lillienfeld, S., Waldman, I., Landfield, K., Watts, A., Rubenzer, S., & Faschingbauer, T. (2012). Fearless dominance and the US presidency: Implications of psychopathic personality traits for successful and unsuccessful political leadership. *Journal of Personality and Social Psychology*, *103*(3) 489-505.

Lim, B-C. & Ployhart, R.E. (2016). Assessing the Convergent and Discriminant Validity of Goldberg's International Personality Item Pool. *Organizational Research Methods*, *9*(1), 29 – 54.

Little, R.J.A., Rubin, D.B. (2002), Statistical Analysis with Missing Data. NY: Wiley.

Lobello, S. G. (1998). Review of the Hogan Personality Inventory (Revised). In J. C. Impara & B. S. Plake (Eds.), *The thirteenth Mental Measurements Yearbook*. Lincoln, NE: Buros Institute of Mental Measurements.

Locke, E. A., Shaw, K. N., Saari, L. M., & Latham, G. P. (1981). Goal setting and task performance: 1969-1980. *Psychological Bulletin, 90*(2*),* 125-152.

Locke, E.A. (1969). What is job satisfaction? *Organizational Behavior and Human Performance, 4(4),* 309–336.

Locke, E.A. (1976). The nature and causes of job satisfaction. *In Handbook of industrial and organizational psychology. M.* Dunnette. (Ed), (pp. 1297–1350). Chicago, IL*:* Rand McNally.

Lombardo, M. M., Ruderman, M. N., & McCauley, C. D. (1988). Explanations of success and derailment in upper-level management positions. *Journal of Business and Psychology, 2*(3*),* 199-216.

Lorenz, K. (1974). *Civilized Man's Eight Deadly Sins*. UK: Harcourt Brace Jovanovich.

Maccoby, M. (2001). The Human Side: Successful Leaders Employ Strategic Intelligence. *Research-Technology Management, 44*,(3), 598-60.

Macey, W.H. & Schneider, B. (2008). The Meaning of Employee Engagement. *Industrial and Organizational Psychology, 1*(1), 3–30.

Mansi, A. (2001). Personality Under Pressure: Management Styles in the Fire Brigade, *The Occupational Psychologist*, December 2001, Vol. 44, BPS Publications.

Mansi, A. (2002). Personality and Management Styles. *Fire Safety, Technology and Management, 7*(4), 14–19.

Mansi, A. (2007). Executive coaching and psychometrics: a case study evaluating the use of the Hogan Personality Inventory (HPI) and the Hogan Development Survey (HDS) in senior management coaching. *The Coaching Psychologist*, *3*(2), 53-58.

Mansi, A. (2008). *The Dark Side of Management: The consequences for organizations.* In Porter, C. Bingham, C, & Simmonds, D.A.J. (Eds). *Exploring Human Resource Management,* (pp.333-350). UK: McGraw-Hill.

Mansi, A. (2013). *Personality at Work: An investigation into Higher Order Factors of Identity and Reputation: A Socioanalytic Perspective*. Conference Presentation, Management and Organizational Psychology PhD Conference, 26 September, 2013. Birkbeck, University of London.

Marinova, S.V., Moon, H.,& Kamdar, D. (2013). Getting Ahead or Getting Along? The Two-Facet Conceptualization of Conscientiousness and Leadership Emergence. *Organization Science 24*(4):1257-1276.

Marshall, L. A., & Lindley, P. (Eds.) (2009). *Hogan Personality Inventory (HPI).* British Psychological Society, Psychological Testing Centre test reviews. London: England. Retrieved from https://ptc.bps.org.uk/system/files/28.pdf

Maslach, C., Schaufeli., W.B., & Leiter, M.P. (2001). Job Burnout. *Annual Review of Psychology, 52(1)*, 397–422.

Maslow, A. H. (1954). *Motivation and personality*. New York: HarperCollins.

Matamala, A. (2011). *Work Engagement as a Mediator Between Personality and Citizenship Behavior.* FIU Electronic Theses and Dissertations. Florida International University. http://digitalcommons.fiu.edu/etd/507.

Matthews, G. & Deary, I. (1998). *Personality Traits*. Cambridge, UK: Cambridge University Press.

McAdams, D. P. (1997). A Conceptual History of Personality Psychology. In Hogan, R., Johnson, J., & Briggs, S. (Eds). (1997) *Handbook of Personality Psychology*, (pp. 4-29). San Diego, CA: Academic Press.

McCall, M.W. Jr., & Lombardo, M.M. (1983). *Off the track: Why and how successful executives get derailed.* Technical Report No.21. Greenboro, NC: Centre for Creative Leadership. Retrieved from http://www.iedp.com/site-search/?Search=off20the20track,20how20executives20get20derailed

McCrae, R.R. & Costa, P.T. (1986). Personality, Coping and Coping Effectiveness in an adult sample. *Journal of Personality, 54*(2), 385-404.

McCrae, R. R., & Costa, P. T. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*(1), 81-90.

McCrae, R. R., Löckenhoff, C. E., & Costa, P. T. (2005), A step toward DSM-V: cataloguing personality-related problems in living. *European Journal of Personality, 14*(4), 269–286.

McGrath, J. E. (1976). Stress and behavior in organizations. In *Handbook of Industrial and Organizational Psychology*. M.D. Dunnett, (Ed.). Chicago: Rand McNally College Publishing.

McNiff, J., & Whitehead, J. (2000). *Action Research in Organisations*. Abingdon, UK: Routledge.

Mead, G.H. (1934). *Mind, Self, and Society*. C.W. Morris (Ed). University of Chicago Press.

Meglino, B. M., Ravlin, E. C., & Adkins, C. L. (1989). A work values approach to corporate culture: A field test of the value congruence process and its relationship to individual outcomes. *Journal of Applied Psychology, 74*(3), 424-432.

Meglino, B.M., Ravlin, E.C., & Adkins, C.L. (1992). The measurement of work value congruence: A field study comparison. *Journal of Management, 18*(1), 33-43.

Messick, S. (1995). Validity of Psychological Assessment: Validation of Inferences From Persons' Responses and Performances as Scientific Inquiry Into Score Meaning. *American Psychologist*, *50*(9), 741-749.

Montgomery, A.J., Peeters, M.C.W., Schaufeli, W.B.. & Den Ouden, M. (2003). Work–home interference among newspaper managers: its relationship with burnout and engagement. *Anxiety, Stress and Coping*, *16*(2), 195–211.

Morgeson, F. P., Reider, M. H., & Campion, M. A. (2005). Selecting individuals in team settings: The importance of social skills, personality characteristics, and teamwork knowledge. *Personnel Psychology, 58(3)*, 583.

Moscoso, S., & Salgado, J.F., (2004). "Dark Side" Personality Styles as Predictors of Task, Contextual, and Job Performance. *International Journal of Selection and Assessment, 12*(4), 356–362.

Mount, M. K., & Barrick, M. R. (1995). The Big Five personality dimensions: Implications for research and practice in human resource management. In K. M. Rowland & G. Ferris (Eds.). *Research in personnel and human resources management*, Vol. 13, (pp. 153-200). Greenwich, CT: JAI.

Mount, M. K., & Barrick, M. R. (1998). Five reasons why the "Big Five" article has been frequently cited. *Personnel Psychology, 51*(4*),* 849–857.

Muchinsky, P.M., & Monahan, C.J. (1987). What is person–environment congruence? Supplementary versus complementary models of fit. *Journal of Vocational Behavior, 31*(3), 268–277.

Muck, P.M., Hell, B., & Gosling, S.D. (2007). Construct Validation of a Short Five-Factor Model Instrument. *European Journal of Psychological Assessment*, *23*(3) 166-175.

Muncer, S. J. (2011). The general factor of personality: Evaluating the evidence from meta-analysis, confirmatory factor analysis and evolutionary theory. *Personality and Individual Differences, 51*(6), 775-778.

Murphy, G. (1954). Social Motivation. In G. Lindzey, (Ed). *Handbook of social psychology*. (Vol 2), (pp. 601-633). Cambridge, MA: Addison-Wesley.

Murphy, P. R., & Jackson, S. E. (1999). Managing work-role performance: Challenges for 21st century organizations and employees. In D.R. Ilgen, & E.D. Pulakos, (1999) (Eds.). *The Changing Nature of Work Performance*, (pp. 325–365). San Francisco: Jossey-Bass.

Musek, J. (2007). A general factor of personality: Evidence for the Big One in the five-factor model. *Journal of Research in Personality*, *41*(6), 1213-1233.

Musolf, G.R. (2003). Social structure, human agency and social policy. *International Journal of Sociology and Social Policy, 23*(6) 1-12.

Najar, M.J., Holland, B.D., & Van Landuyt, C.R. (2004). *Individual Differences in Leadership Derailment.* Paper presented at the 19th Annual Conference for the Society for Industrial and Organizational Psychology. April 2, 2004, Chicago, Illinois.

Nerstad, C.G.L., Richardsen, A.M., Martinussen, M. (2010). Factorial validity of the Utrecht Work Engagement Scale (UWES) across occupational groups in Norway. *Scandinavian Journal of Psychology*, *51*(4), 326-333.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd Ed.). New York, NY: McGraw-Hill.

Oates, W. (1971). *Confessions of a Workaholic: The Facts about Work Addiction*. New York: World Publishing Co.

Oh, I.S., Wang, G., & Mount, M.K. (2011). Validity of Observer Ratings of the Five-Factor Model of Personality Traits: A Meta-Analysis. *Journal of Applied Psychology*, *96*(4), 762-773.

Ones, D.S., & Viswesvaran, C. (1996). Bandwidth–fidelity dilemma in personality measurement for personnel selection. *Journal of Organizational Behavior* 17(6), 609–626.

Ones, D.S., Viswesvaran, C., & Schmidt, F.L. (2003). Personality and absenteeism: a meta-analysis of integrity tests. *European Journal of Personality, 17*(SI), S19-S38.

Ostroff, C., & Schulte, M. (2007). Multiple perspectives of fit in organizations across levels of analysis. In C. Ostroff & T.A. Judge (Eds.). *Perspectives on organizational fit,* (pp. 3–69). Mahwah, NJ: Lawrence Erlbaum.

Ozer, D.J. & Benet-Martinez, V. (2006). Personality and the Predictions of Consequential Outcomes. *Annual Review of Psychology, 57*, 401–21 .

Padilla, A., Hogan, R., & Kaiser, R.B. (2007). The toxic triangle: Destructive leaders, susceptible followers, and conducive environments. *The Leadership Quarterly, 18*(3), 176-194.

Page, M.M. (Ed). The Nebraska Symposium on Motivation (1982). *Personality – Current Theory and Research* p. xi. Lincoln, USA: University of Nebraska Press.

Panthee, B., Shimazu, A., & Kawakami, N. (2014). Validation of Nepalese Version of Utrecht Work Engagement Scale. *Journal of Occupational Health, 56*(6*): 421–429.*

Paolacci, G. & Chandler, J. (2014). Inside the Turk: Understanding Mechanical Turk as a Participant Pool. *Current Directions in Psychological Science*, *23*(3), 184-188.

Paulhus, D. L. (1984). Two-component models of socially desirable responding. *Journal of Personality and Social Psychology, 46*(3) 598-609.

Paulhus, D. L., & Jones, D. N. (2011). Introducing a short measure of the Dark Triad. *Poster presented at the meeting of the Society for Personality and Social Psychology,* San Antonio. January, 2011. Retrieved from http://www.midss.org/sites/default/files/d3.pdf

Paulhus, D. L., & Vazire, S. (2007). The self-report method. In R. W. Robins, R. C.Fraley, and R. Krueger (Eds.), *Handbook of Research Methods in Personality Psychology* (pp. 224-239). New York: Guilford Press.

Paulhus, D.L. & Williams, K.M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality 36*(6). 556–563.

Paunonen, S. V., & Jackson, D. N. (2000). What is beyond the Big Five? Plenty! *Journal of Personality*, *68*(5), 821–835.

Peccei, R. (2013). Employee Engagement: An Evidence-based Review. In S. Bach, & M. Edwards, (Eds). *Managing Human Resources*, (5th Edition), (pp. 336-363). Chichester: John Wiley and Sons.

Peiperl, M. and Jones, B. (2001), 'Workaholics and overworkers: productivity or pathology?' *Group and Organization Management, 26*(3), 369–93.

Penney, L. M., & Spector, P. E. (2002). Narcissism and counterproductive work behavior: Do bigger egos mean bigger problems? I*nternational Journal of Selection and Assessment,* 10(1-2), 126-134.

Perry, R. B. (1954). *Realms of value: A critique of human civilization*. Cambridge, MA: Harvard University Press.

Piasentin, K.A., & Chapman, D.S. (2007). Perceived similarity and complementarity as predictors of subjective person–organization fit. *Journal of Occupational and Organizational Psychology, 80*(2), 341-354.

Piedmont, R.L., Sherman, M.F., Sherman, N.C. , Dy-Liaco, G.S., & Williams, J.E.G. (2009). Using the Five Factor Model to Identify a New Personality Disorder Domain: The Case for Experiential Permeability. *Journal of Personality and Social Psychology, 96*(6), 1245-1258.

Ployhart R.E., Schneider B., Schmitt N. (2006). *Staffing organizations: Contemporary practice and theory*, Mahwah, NJ: Lawrence Erlbaum.

Poropat, A.G. (2009) A Meta-Analysis of the Five-Factor Model of Personality and Academic Performance. *Psychological Bulletin, 135*(2), 322-338.

Porter, L.W. & Lawler, E.E. (1968). *Managerial attitudes and performance*. York: Irwin-Dorsey.

Prenda, K.M., & Stahl, S.S. (2001). Peak job performance at any age: The truth about older workers. *Business and Health* May, 5(30). Retrieved from http://managedhealthcareexecutive.modernmedicine.com/managed-healthcare-executive/news/clinical/personal-finance/peak-job-performance-any-age-truth-about?page=full

Pytlik-Zillig, L. M.; Hemenover, S. H.; & Dienstbier, R. A. (2002). What Do We Assess When We Assess a Big 5 Trait? A Content Analysis of the Affective, Behavioral, and Cognitive Processes Represented in Big 5 Personality Inventories. *Personality and Social Psychology Bulletin, 28*(6), 847-858.

Ramsey, S., Thompson, K., McKenzie, M. & Rosenbaum, A. (2016). Psychological research in the internet age: The quality of web-based data. *Computers in Human Behavior, 58*(May, 2015), 354-360.

Raskin, R., Novacek, J., & Hogan, R. (1991). Narcissism, Self-Esteem and Defensive Self-Enhancement. *Journal of Personality*, *59*(1), 19-38.

Rauthmann, J.F. & Kolar, G.P. (2013). The perceived attractiveness and traits of the Dark Tried: Narcissists are perceived as hot, Machiavellians and Psychopaths as not. *Personality and Individual Differences,* 54(5), 582-586.

Renau, V., Oberst, U., Gosling, S.D., Rusiñol, J., & Chamarro, A. (2013). Translation and validation of the Ten- Item-Personality Inventory into Spanish and Catalan. Aloma. 2013 31(2), 85-97 *Revista de Psicologia, Ciències de l'Educació i de l'Esport. Retrieved from https://gosling.psy.utexas.edu/scales-weve-developed/ten-item-personality-measure-tipi/*

Revelle, W. & Wilt, J. (2009a). How important is the General Factor of Personality? A General Critique. *Journal of Research into Personality, 47*(5), 493-504.

Revelle, W. and Wilt, J. (2009b). *Is there a general factor of personality? Probably not.* Paper presented at the 49th annual meeting of the Society of Multivariate Experimental Psychology. Oregon, October, 2009. Retrieved from http://www.personality-project.org/dev/revelle.html

Rigdon, E. E. (1998). Structural equation modeling. In G. A. Marcoulides (Ed.), Modern methods for business research, pp 251-294. Mahwah, NJ: Lawrence Erlbaum

Ritzer, G. (2008). *Sociological Theory*. NY: McGraw-Hill.

Roberts, B. W., Chernyshenko, O. S., Stark, S., & Goldberg, L. R. (2005). The structure of conscientiousness: An empirical investigation based on seven major personality questionnaires. *Personnel Psychology*, *58*(1), 103-139.

Robertson, I. T., & Cooper, C.L. (2010). Full engagement: the integration of employee engagement and psychological well-being. *Leadership & Organization Development Journal, 31*(4), 324-336 .

Robins, R. W., & John, O. P. (1997). The quest for self-insight: Theory and research on the accuracy of self-perception. In H. Hogan, J. Johnson, and S. Briggs (Eds.), *Handbook of personality psychology* (pp. 649-679). New York: Academic Press.

Rokeach, M. (1973). *The Nature of Human Values.* New York: Free Press.

Ronson, J. (2011). *The Psychopath Tes*t: A Journal Through the Madness Industry. NY*:* Riverhead Books.

Ross, R., Brinkmeyer, K., & Hogan, R. (1998). *Validity of the Hogan Personality Inventory for selecting department managers and assistant managers* (Tech. Rep. No. 143). Tulsa, OK: Hogan Assessment Systems.

Ross, R., Rybicki, S., & Hogan, J. (1997). *Validity of the Hogan Personality Inventory for selecting office clerks and office managers* (Tech. Rep. No. 142). Tulsa, OK: Hogan Assessment Systems.

Rosseel, Y. (2012). Lavaan: An R Package for Structural Equation Modeling. *Journal of Statistical Software*, 48(2), 1-36.

Rothmann, S., & Coetzer, E.P. (2003). The Big Five Personality Dimensions and Job Performance. *South African Journal of Industrial Psychology, 29*(1), 68-74.

Roy, D., Black, M., McPeek, B. (1991). *Principles and Practice of Research*. London: Routlege.

Rushton, J. P. (1985). Differential K theory: The sociobiology of individual and group differences. *Personality and Individual Differences, 6*(4),441–452.

Rushton, J.P. (1995). *Race, Evolution and Behaviour: A Life History Perspective.* NJ: Transaction Books.

Rushton, J.P., Bons, T.A & Hur, Y.M. (2008). The genetics and evolution of the general factor of personality. *Journal of Research in Personality, 42*(5), 1173-1185.

Rushton, J.P. & Irwing, P. (2008). A General Factor of Personality (GFP) from two meta-analyses of the Big Five: Digman (1997) and Mount, Barrick, Scullen and Rounds (2005). *Personality and Individual Differences,* 45(7), 679-683.

Rushton, J.P. & Irwing, P. (2011). A General Factor of Personality. In *The Wiley-Blackwell Handbook of Individual Differences.* T. Chamorro-Premuzic, S. von Strumm, & A. Furnham (Eds.), (pp. 132-161). London: Blackwell Publishing Ltd.

Rust, J. & Golombok, S. (2009). Modern Psychometrics: *The Science of Psychological Assessment* (3rd Ed). Abingdon, UK: Routledge.

Rybicki, S., Brinkmeyer, K., & Hogan, R. (1997). *Validity of the Hogan Personality Inventory for selecting customer service representatives, drivers, and delivery and installation/service,* (Tech. Rep. No. 102). Tulsa, OK: Hogan Assessment Systems. Retrieved from http://info.hoganassessments.com/hubfs/Sales_BASIS_8-26-15_FINAL.pdf?t=1441308505825.

Rybicki, S., & Hogan, R. (1996). *Validity of the Hogan Personality Inventory for selecting salespersons,* (Tech. Rep. No. 99). Tulsa, OK: Hogan Assessment Systems. Retrieved from http://info.hoganassessments.com/hubfs/Sales_BASIS_8-26-15_FINAL.pdf?t=1441308505825.

Rybicki, S., & Hogan, R. (1997). *Validity of the Hogan Personality Inventory for selecting facility administrators,* (Tech. Rep. No. 118). Tulsa, OK: Hogan Assessment Systems. Retrieved from http://info.hoganassessments.com/hubfs/Sales_BASIS_8-26-15_FINAL.pdf?t=1441308505825.

Sackett, P. R., & Wilk, S. L. (1994). Within-Group Norming and Other Forms of Score Adjustment in Pre-employment Testing. *American Psychologist*, *49*(11), 929-954.

Saks, A. M (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology, 21*(7), 600–619.

Saks, A. M. & Gruman, J. A. (2014). What Do We Really Know About Employee Engagement? *Human Resource Development Quarterly, 25*(2), 155–182.

Salgado, J.F. (1997). The five-factor model of personality and job performance in the European Community. *Journal of Applied Psychology, 82*(1), 30-43.

Salgado, J.F. (2002). The Big Five Personality Dimensions and Counterproductive Behaviors. *International Journal of Selection and Assessment, 10*(1-2), 117-125.

Salgado, J. F., & Moscoso, S. (1999). *Construct validity of two personality inventories based upon the five-factor model (FFM).* Paper presented at the fourteenth annual conference of the Society for Industrial-Organizational Psychology, April 30 – May 2 1999. Atlanta, GA.

Sansone, R.A., & Sansone, L.A (2010). Gratitude and Well Being: The benefits of Appreciation. *Psychiatry*, *7*(11), 18–22.

Saucier, G., & Goldberg, L.R. (1996). The language of personality: Lexical perspectives on the five-factor model. In J. S. Wiggins (Ed.), *The five-factor model of personality: Theoretical perspectives* (pp. 21-50). NY: Guilford.

Saucier,G., & Goldberg, L.R. (1998). What is beyond the Big Five? *Journal of Personality, 66*(4), 495-524.

Saunders, M., Lewis, P., & Thornhill, A. (2016). *Research Methods for Business Students*. (5th Edition). London: Pearson Education.

Schaufeli, W.B. (2014). What is engagement? In C. Truss, K. Alfes, R. Delbridge, A. Shantz, & E. Soane (Eds.), Employee Engagement in Theory and Practice, (pp. 15-35). Abingdon, UK: Routledge.

Schaufeli, W., & Bakker, A. (2003). Utrecht Work Engagement Scale. *Occupational Health Psychology, 4-41.* Retrieved from: http://www.wilmarschaufeli.nl/publications/Schaufeli/Test%20Manuals/Test_manual_UWES_English.pdf

Schaufeli, W.B. & Bakker, A.B. (2004). 'Job demands, job resources and their relationship with burnout and engagement: a multi-sample study', *Journal of Organizational Behaviour, 25*(3), 293–315.

Schaufeli, W.B., Bakker, A., B., & Salanova, M. (2006). The Measurement of Work Engagement With a Short Questionnaire: A Cross-National Study. *Educational and Psychological Measurement, 66*(4) 701-716.

Schaufeli, W.B., Martinez, I., Pinto, A.M., Salanova, M. & Bakker, A.B. (2002). Burnout and engagement in university students: a cross national study. *Journal of Cross-Cultural Psychology, 33*(5), 464–81.

Schaufeli, W.B., Salanova, M., & Gonzalez-Roma, V. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies, 3*(1), 71–92.

Schaufeli, W.B., Taris, T.W., & Bakker, A.B. (2006). Dr Jekyll and Mr Hyde? On the differences between work engagement and workaholism. In R.J. Burke, (Ed.). *Research Companion to Working Time and Work Addiction.* New Horizons in Management, (pp. 193-217). Cheltenham, UK: Edward Elgar.

Schaufeli, W.B., Taris, T.W. & Van Rhenen, W. (2008). 'Workaholism, burnout and engagement: three of a kind or three different kinds of employee well- being?', manuscript submitted for publication. *Applied Psychology: An International Review, 57*(2), 173–203.

Schlenker, B.R. (1986*).* *Self-Identification: Towards an Integration of the Private and Public Self.* In Baumeister, R.F. (Ed) (1986). *Public Self and Private Self,* (pp. 21-22). NY: Springer-Verlag.

Schmidt, F.L. & Hunter, J.E. (1998). The Validity and Utility of Selection Methods in Personnel Psychology: Practical and Theoretical Implications of 85 Years of Research Findings. *Psychological Bulletin*, *124*(2), 262-274.

Schneider, R. (1987). The People Make the Place. *Personnel Psychology, 40*(3), 437-453.

Schneider, B., & Smith, D. B. (2004). Personality and organizational culture. In B. Schneider & D. B. Smith (Eds.). *Personality and organizations*, (pp. 347–370). Mahwah, NJ: Erlbaum.

Scott, K.S., Moore, K.S.. & Miceli, M.P. (1997). An exploration of the meaning and consequences of Workaholism. *Human Relations*, *50(3),* 287–314.

Searle, R. H. (2009). Recruitment and Selection. In D.G. Collings, & G. Wood, (Eds). *Human Resources Management: a Critical Approach*, (pp. 151-158). Abingdon, UK: Routledge.

Sells, S.B. (1970). On the nature of stress. In J.E. McGrath (Ed). *Social and psychological factors in stress*, (pp. 134–139). NY: Holt, Rinehart, & Winston.

Seppälä, P., Mauno, S., Feldt, T., Hakanen, J., Kinnunen, U., Schaufeli, W. & Tolvanen, A. (2009). The Construct Validity of the Utrecht Work Engagement Scale: Multi-sample and Longitudinal Evidence. *Journal of Happiness Studies*, *10*(4), 459-481.

Sewell, G. & Barker, J., & Nyberg, D. (2012). Working under intensive surveillance: When does 'measuring everything that moves' become intolerable? *Human Relations*, *65*(2), 189-215.

Shahrazad, W., Sulaiman, W. & & Zahoni, N.A. (2016). Validation of the Utrecht Work Engagement Scale (UWES) in the Malaysian Context. *International Journal of Social Science and Humanity, 6*(9), 672-676.

Sheppard, R., Han, K., Colarelli, S.M., Dai, G., & King, D.W. (2006). Differential Item Functioning by Sex and Race in the Hogan Personality Inventory. *Assessment*, *13*(4), 442-453.

Shirom A. (1982). What is organizational stress? A facet analytic conceptualization. *Journal of Occupational Behavior, 3*(1), 21–37.

Shyamsunder, A., & Barney, M. (2012). *Observer Ratings of Leader Personality and Performance: A test of Socioanalytic theory.* Paper presented at the Academy of Management Annual Conference, (August 3-7, 2012). Boston, Massachusetts, USA.

Smither, J.W., & London, M. (Eds). (2009). *Performance management: Putting research into action.* San Francisco: Jossey-Bass.

Smither, J. W., London, M., & Reilly, R. R. (2005). Does performance improve following multisource feedback? A theoretical model, meta-analysis, and review of empirical findings. *Personnel Psychology*, *58*(1), 33-66.

Snyder, M. (1987). *Public appearances/private realities: The psychology of self-monitoring*. New York: Freeman.

Snyder, M. & Copeland, J. (1989). Self-monitoring processes in organizational settings. In R.A. Giacalone & P. Rosenfeld (1993), (Eds). *Impression management in the organization,* (pp. 7-19). Hillsdale, NJ: Lawrence Erlbaum.

Soldz, S., & Vaillant, G. E. (1999). The Big Five personality traits and the life course: A 45-year longitudinal study. *Journal of Research in Personality, 33*(2), 208-232.

Sprouse, J. (2011). A validation of Amazon Mechanical Turk for the collection of acceptability judgements in linguistic theory. *Behavior Research Methods, 43*(1), 155-167.

Srivastava, S. (2010). The Five-Factor Model describes the structure of social perceptions. *Psychological Inquiry, 21*(1), 69-75.

Srivastava, S., John, O. P., Gosling, S., & Potter, J. (2003). Development of personality in early and middle adulthood: Set like plaster or persistent change? *Journal of Personality and Social Psychology*, *84*(5), 1041-1053.

Stanley R.O. & Burrows, G.D. (2001). Varieties and Functions of Human Emotions. In Payne, R.L. and Cooper, C.L. (Eds). *Emotions at Work: Theory, Research and Applications for Management* (2001) (pp. 3-19). London: Wiley & Sons Ltd.

Stemler, S.E. (2004). A comparison of consensus, consistency, and measurement approaches to estimating interrater reliability. *Practical Assessment, Research & Evaluation*, *9*(4), 1-11.

Sterelny, K. (2003). *Thought in a Hostile World: The Evolution of Human Cognition*. Malden, MA: Blackwell.

Sternberg, R. J., Grigorenko, E.L., & Kidd, K.K. (2005). Intelligence, Race and Genetics. *American Psychologist, 60*(1): 46 –59.

Strümpfer, D.J.W., Danana, N., Gouws, J.F. & Viviers, M.R. (1998). Personality dispositions and job satisfaction. *South African Journal of Psychology*, *28*(2), 92-100.

Sullivan, H.S. (1953). *The Interpersonal Theory of Psychiatry*. New York: Norton.

Suls, J., David, J.P., & Harvey, J.H. (1996). Personality and Coping: Three Generations of Research. *Journal of Personality*, *64*(4), 711-35.

Tabachnick, B.G., & Fidell, L.S. (2007). *Using Multivariate Statistics*, 5th Edition. Boston, USA: Pearson Education, Inc.

Tanaka, J. S., & Huba, G. J. (1985). A fit index for covariance structure models under arbitrary GLS estimation. *British Journal of Mathematical and Statistical Psychology*, *38*(2), 197–201.

Templer, D.I. (2013). Rushton: The great theoretician and his contribution to personality. *Personality and Individual Differences, 55*(3), 243-246.

Terracciano, A., Costa, P. T., & McCrae, R. R. (2006). Personality plasticity after age 30. *Personality and Social Psychology Bulletin*, 32(8), 999-1009.

Tett, R.P., Jackson, D.N., & Rothstein, M. (1991). Personality Measures as Predictor of Job Performance: A Meta-Analytic Review. *Personnel Psychology, 44*(4), 703–742.

Thorndike, R.L., (1949). *Personnel Selection: Test and Measurement Techniques*. NY: Wiley.

Trevino, J. A. (2003). (Ed). *Goffman's Legacy*. Oxford: Rowman & Littlefield Publishers.

Truss, C., Shantz, A., Soane, E., Alfes, K. and Delbridge, R. (2013). Employee engagement, organisational performance and individual well-being: exploring the evidence, developing the theory. *The International Journal of Human Resource Management*, *24*(14), 2657–2669.

Twenge, J.M. (1997). Changes in masculine and feminine traits over time: a meta-analysis. *Sex Roles, 36*(5-6), 305-25.

Tyler, G. (2014). *The Chinese Personality at Work Research Project*. University of Queensland, Australia. Asian Personality at Work Research. Retrieved from http://personality.cn.

Van Vianen, A.E.M. (2000). Person-Organization Fit: The Match Between Newcomers' and Recruiters' Preferences for Organizational Cultures. Personnel Psychology, 52(1), 113–149.

Van Den Berg, P. & Feij, J. (1993). Personality Traits and job characteristics as predictors of job experience. *European Journal of Personality, 7*(5), 337 -57.

Van der Linden, D., Nijenhuis, J., & Bakker, A.B., (2010). The general factor of personality: A meta-analysis of Big Five intercorrationals and a criterion-related validity study. *Journal of Research in Personality*, *44*(3), 315-327.

Van der Linden, D., Vreeke, L., & Muris P. (2013). Don't be afraid of the General Factor of Personality (GFP): Its relationship with behavioural inhibition and anxiety symptoms in children. *Personality and Individual Differences, 54*(3), 367-371.

van de Vijver, F. J. R., & Hambleton, R. K. (1996). Translating tests: Some practical guidelines. European Psychologist, *1*(2), 89-99.

Van de Vijver, F. J. R., & Tanzer, N. K. (2004). Bias and equivalence in cross-cultural assessment: An overview. *Revue Européenne de Psychologie Appliquée/European Review of Applied Psychology, 54*(2*),* 119-135.

Vance, R. J. (2006). *Employee Engagement and Commitment: A guide to understanding, measuring and increasing engagement in your organization*. Virginia: SHRM. Retrieved from https://www.shrm.org/hr-today/trends-and-forecasting/special-reports-and-expert-views/Documents/Employee-Engagement-Commitment.pdf

Viswesvaran, C. & Ones, D. S. (1999). Meta-analyses of fakability estimates: Implications for personality measurement. *Educational and Psychological Measurement, 59*(2), 197 – 210.

Wade, N. (2006). *Before the dawn*. New York: Penguin.

Wade, N. (2009). *The faith instinct.* New York: Penguin.

Wanous, J.P. (1992). *Organizational entry: Recruitment, selection, and socialization of newcomers* (2nd Edition). Reading, MA: Addison-Wesley.

Ward, Chuck (2012). Evolutionary Psychology and the Problem of Neural Plasticity. In K. Plaisance, S. Reydon, & A.C. Thomas, (Eds). *Philosophy of Behavioral Biology*. (pp. 235–254). Dordrecht: Springer.

Warren, C. (2017). Every man for himself: is employee engagement reaching its full potential? *People Management*. Retrieved from http://www2.cipd.co.uk/pm/peoplemanagement/b/weblog/archive/2017/06/23/every-man-for-himself-is-employee-engagement-reaching-its-full-potential.aspx.

Warr, P. B. (2012). Jobs and job-holders: Two sources of happiness and unhappiness. In K. Cameron and A. Caza (Eds). *Happiness and organizations, (pp.733-750).* Oxford: Oxford University Press.

Wefald, A. J., & Downey, R. G. (2009). Construct dimensionality of engagement and its relation with satisfaction. *The Journal of Psychology*, *143*(1), 91-111.

Wefald, A., Reichard, R. and Serrano, S. (2011). Fitting engagement into a nomological network: the relationship of engagement to leadership and personality. *Journal of Leadership and Organizational Studies, 18*(40), 522-537.

Werbel, J.D., & Gilliland, S.W. (1999). Person–environment fit in the selection process. In G.R. Ferris (Ed.), *Research in personnel and human resources management* (Vol. 17, (pp. 209–243). Stamford, CT: JAI Press.

West, R.L. & Turner, L.H. (2017). Introducing Communication Theory: Analysis and Application 2nd Edition. NY: McGraw-Hill Global Education.

Widaman, K. F., Ferrer, E., & Conger, R. D. (2010). Factorial Invariance within Longitudinal Structural Equation Models: Measuring the Same Construct across Time. *Child Development Perspectives*, *4*(1), 10–18.

Widiger, T.A., Costa, P.T., & McCrae, R.R. (2001). Proposals for Axis II: Diagnosing personality disorders using the five factor model. In P.T. Costa, & T.A.Widiger (Eds).

Personality disorders and the five factor model of personality (1994, 2nd Ed.), (pp. 432-446). Washington, DC: American Psychological Society.

Widiger, T.A., & Mullins-Sweatt, S.N. (2009). Five-factor model of personality disorder: A proposal for DSM-V. (April 2009). *Annual Review of Clinical Psychology*, Vol. 5(1), 197-220.

Widiger, T.A., Trull, T.J., Clarkin, J.F., Sandeson, C. and Costa, P.T. Jr. (1994). A Description of the DSM-III-R and DSM-IV Personality Disorders with The Five Factor Model of Personality. In P.T. Costa & T.A. Widiger (Eds). (2002). *Personality disorders and the five factor model of personality* (2nd Ed.), (pp. 41-56). Washington, DC: American Psychological Association.

Wiggins, J.S. (Ed). (1996). *The Five Factor Model of Personality*. Guildford Press, UK.

Wiggins, J.S. & Pinkus, A.L. (1992). Personality: Structure and Assessment. *Annual Review of Psychology*, *43*(1): 473-504

Wiggins, J.S. & Trapnell, P.D. (1996). A dyadic-interpersonal perspective on the Five Factor Model. In J.S. Wiggins (Ed.) *The Five Factor Model of Personality* Theoretical Perspectives (pp.82-162) NY: Guilford Press.

Wilks, L. (2009). The stability of personality over time as a function of personality trait dominance. *Personality and Individual Differences*, Student Psychology Journal, *1*, 2009, 132-197. School of Psychology, Griffith University. Retrieved from https://research-repository.griffith.edu.au/bitstream/handle/10072/340327/132-197-1-PB.pdf?sequence=1&isAllowed=y

Wille, B., De Fruyt, F., and De Clercq, B. (2013). Expanding and Reconceptualizing Aberrant Personality at Work: Validity of Five-Factor Model Aberrant Personality Tendencies to Predict Career Outcomes. *Personnel Psychology*, *66*(1), 173-223. London: Wiley Periodicals Inc.

Williams, B., Onsman, A., Brown, T., & A. Rasch (2012). Factor analysis of a paramedic graduate attribute scale. *Evaluation & The Health Professions,* 35(2), 148-168.

Wink, P. (1997). Beyond Ethnic Differences: Contextualizing the Influence of Ethnicity on Individualism and Collectivism. Journal of Social Issues. *A Journal of the Society for the Psychological Study of Social Issues*, 53(2), 329–349.

Winnicott, D.W. (1964). *The Child the Family and the Outside World*. London: Pelican Books.

Wolfe, R.N., Lennox, R.D., & Cutler, B.L. (1986). Getting Along and Getting Ahead: Empirical evidence for a theory of Protective and Acquisitive Self-Presentation. *Journal of Personality and Social Psychology, 50*(2), 356-361.

Wood, D. O., & Brumbaugh, C. C. (2009). Using revealed mate preferences to evaluate market force and differential preference explanations for mate selection. *Journal of Personality and Social Psychology*, *96*(6), 1226-1244.

Woods, S.A. & Hampson, S.E. (2005). Measuring the Big Five with single items using a bipolar response scale. *European Journal of Personality, 19*(5), 373-390.

Wood, A.M., Joseph, S. & Maltby, J. (2009). Gratitude predicts psychological well-being above the Big Five facets. *Personality and Individual Differences. 46*(4), 443-447.

Woods, S.A. & Hardy, C. (2012). The Higher Order factor structures of five personality inventories. *Personality and Individual Differences*, *52*(4), 552 – 558.

Xanthopoulou, D., Bakker, A.B., Demerouti, E. & Schaufeli, W.B. (2009). Work engagement and financial returns: A diary study on the role of job and personal resources. *Journal of Organizational and Occupational Psychology*, *82*(1), 183-200.

Appendices

Appendix 4.1 Proposal Form for Ethical Review, School of Business, Economics, Informatics

Name(s) of applicant	Angela Mansi
Status (e.g. Lecturer, PhD Student)	PhD Student
Supervisor(s)	Professor Tomas Chamorro-Premuzic (UCL) Dr Chris Dewberry (BBK)
Department	BEIE Organisational Psychology
Project status (e.g. UG, PG, doctorate, individual staff research, externally funded project)	PhD
Funding source	Organisational funding 2009 - 2012 Personal funding 2013 - 2016
Project Title	Personality at Work: An empirical investigation into higher order factors underpinning Identity and Reputation

Attachments:
Indicate the attachments enclosed with this form (please tick boxes):

Information sheet: ☐ Consent Form: ☐ Questionnaire: ☐ Other: ☐

Description and rationale or proposed project

A quantitative study with three empirical chapters. Statistical analysis includes EFA, MLE and CFA.

Socioanalytic Theory argues that the purpose of personality theory is to explain the individual engaged in social action. (Hogan, 1976, 1983; Hogan, Jones and Cheek,1985). The value of knowing how someone is likely to act in a social setting, based on personality measurements, is not only useful for organisations but key to the selection process, particularly at the initial selection and assessment stage, as well as for any future development. Selection based on personality is based on the assumption that past behaviour is most likely to predict future behaviour, and that certain personality characteristics will best fit certain roles, groups and organisations. Therefore, selection for personality matters. Socioanalytic Theory places the personality firmly in a social setting, rather than being merely a set of descriptive traits.

The research on observer ratings referred to above points to a more rewarding and effective way of selecting individuals. Rather than continuing to use self reports only for selection or development, it seems to be of more value to use observer ratings in tandem, which would assess someone's reputation based on observable behaviours, as well as self-reports for identity, thus gaining a richer and more inclusive picture of the individual.

While personality tests generally seek to evaluate individual personality traits, there are few that encode such traits in reputational terms. It is argued that it is our reputation, evaluated by others, that gains us success rather than internal processes, which help, form our identity (Hogan, Jones & Cheek, 1985). It would seen, therefore, that knowing how two psychometric measures merge to form three super factors would indicate more effectively how someone might be seen at work, and what factors are at play in how they are driven to success. Three super factors would allow for particular profiles to be measured which would include a mixture of traits from the personality measurement HPI and the meanings, values and motives MVPI an individual has, and indicate whether someone is more disposed to GAH, GAL or driven by Meanings.

Ethical issues:

This study was approved by the Birkbeck Ethics Committee (University of London) in 2011.

Archival data was accessed and no primary data was collected.

All participants were informed by HAS that data collected would be kept confidential and would be put into an archival database for future research.

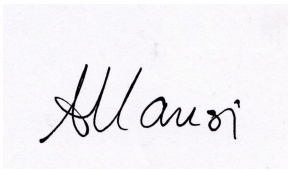
I confirm that the proposed project conforms with College and professional ethical guidelines, as indicated: *(please circle)*

1. Access to participants: **YES** / NO / DON'T KNOW
2. Informed consent: **YES** / NO / DON'T KNOW
3. Anonymity and Confidentiality: **YES** / NO / DON'T KNOW
4. Potential Harm to Participants: YES / **NO** / DON'T KNOW
5. Potential Harm to Researcher(s) YES / **NO** / DON'T KNOW

6. Potential Harm to the College: YES / **NO** / DON'T KNOW
7. Participants' right to decline to take part: YES / NO / **DON'T KNOW**
8. Uses of the information (including publication): **YES** / NO / DON'T KNOW
9. Conflicts of Interest: YES / **NO** / DON'T KNOW
10. Other relevant ethical concerns (please specify): YES / NO / DON'T KNOW

(feedback was offered to each participant by a qualified test user from HAS (Tulsa, USA).

Classification of project ***(please circle)*****:** **ROUTINE / NON-ROUTINE**



Signed by:

The applicant: Angela Mansi Date: 8 November 2011

Supervisor: (if applicable) Dr Chris Dewberry Date: 8 November 2011

Department Research Ethics Officer: …… Date: ……

Appendix 6.1 Nineteen Performance outcomes

Time Management (TM)
Resource Management (RM)
Planning Organizing (O)
Perseverance (P)
Achievement Orientation (A0)
Influence (I)
Industry Knowledge (IK)
Sales Ability (SA)
Flexibility (F)
Oral Communication (OC)
Active Listening (AL)
Stress Tolerance (ST)
Building Relationships (BR)
Interpersonal Sensitivity (IS)
Caring (C)
Teamwork (T)
Citizenship (CS)
Service Orientation (SO)
Responsibility (R)

Nineteen performance indicators were identified and developed by participants' supervisors, in tandem with Hogan Assessment Systems for use in this study.

Appendix 7.1 Personality Questionnaire Item Statements for raters

Section1: Demographics

Sex:	Female	Male					
Age:	18 – 24	25-34	35-44	45-54	55-64	65-74	75 yrs +
Marital status:	Single	Married	Partnered	Divorced	Widowed	Other	
Ethnic Group:	**Choose one option that best describes your ethnic group or background**						
	White British	White other	Mixed race	Black British	Black	Asian	
	Black African	Caribbean	Indian	Pakistani	Chinese	Other Asian ……	Other ……
Occupation:	Manual	Semi-skilled	Skilled	Supervisory/Managerial		Senior Management.	
Annual Income:	£10-15,000	£15-25,000	£25-40,000	£40-50,000	£50-65,000	£65-80,000	£80,000.00+
Highest Educational Level:	Secondary school	FE College	Undergraduate	Post-Graduate	MBA	MPhil/PhD	Professional

Section 2: Item statements – samples for expert rating

Scale Name	Item statements
GAH – *not* to be given to participants	Getting Ahead – need for achievement, need for power. Someone with high GAH wanting to be seen as high status, to be recognised as someone important, and to be someone of influence. Such people are drawn to positions of power, authority and leadership. They like to be seen as leaders of their group, if not their organizations. They like to control their immediate environment as well the resources available to them. They enjoy living well, which comes with high status, and use their social influence to further their careers. Which of the following statements do you think *most* reflects this:
How far do you agree that the following statements reflect someone who wants to ***get ahead*** at work? Please mark on a scale of 1-5 with 5 being highest.	

	Low 1	*2*	*3*	*4*	*High 5*
1. It is important for me to have my work recognized					
2. I prefer to make my own work decisions					
3. I always offer to take positions of responsibility in groups					
4. I liked to be thanked personally for a job well done					
5. I enjoy networking					
6. I enjoy socializing with colleagues					
7. I am able to influence those around me at work					
8. I usually offer to present group projects					
9. I like to be invited to social events by work colleagues					
10. I like to be in positions of authority at work					
11. Colleagues often turn to me for advice					
12. I am comfortable giving negative feedback					
13. I always follow up invitations to build work relationships with new people					
14. I prefer to manage any team project					
15. I handle responsibility well					
16. I like to be in control of events at work					
17. I have a good grasp of workplace alliances					
18. I like challenges which show off my skills					
19. I can be forceful at work when I want something done					
20. I make my thoughts clear to colleagues					
21. People describe me as confident and outgoing					
22. I like to put work plans into action					
23. Work is more fun when there is an element of competition					

24. What others might call bullying I call being assertive					
25. Other people's routines and schedules often frustrate me					
26. I prefer to do business in a social setting than in an office					
27. I like to have a laugh with my work colleagues					
28. Some people take work far too seriously and forget to enjoy it					
29. I would enjoy a job that involved travelling					
30. I do my best work when my job assignments are fairly difficult					
31. I try very hard to improve on my past performance at work					
32. I try to perform better than my colleagues					
33. If I have a good idea I am not afraid to voice it at work meetings					
34. I stick my neck out to get ahead at work					
35. I like to be rewarded for my hard work					
36. It is important to me that others recognise my expertise					
37. I tend not to take criticism too personally					
38. I expect my good performance to be rewarded with a bonus					
39. Colleagues would describe me as confident in my work					
40. I am quick at spotting a business opportunity					
41. I think I have a duty to make the most of any opportunities that arise					
42. Earning a high salary is a fair reflection of how others value me					

Scale Name	Item statements:
GAL	Getting Along – need for affiliation and sociability with others - means considering their needs, taking time to be helpful, understanding how they work, and supporting others. Such people are usually pleasant to be around as they emotionally stable and considerate. They trust others, spend time building relationships and remember to show appreciation. They are keen to do well in their careers and see getting on with other people as part of this, networking well and mixing

	socially in an effort to build relationships with like-minded people. Which of the following statements do you think *most* reflects this:

How far do you agree that the following statements reflect someone who wants to ***get along*** at work? Please mark on a scale of 1-5 with 5 being highest.

	Low 1	*2*	*3*	*4*	*High 5*
1. Taking the team out for dinner or a drink helps with team bonding					
2. I prefer working as part of a team than on my own					
3. Other people seem to open up to me					
4. I listen well to other people					
5. It is important to learn to compromise at work					
6. I like to be as helpful as I can with other colleagues					
7. Group cohesion helps with effective team working					
8. I often socialise with colleagues outside of work					
9. I try to see things from other people's point of view					
10. It is important to encourage individual talent at work					
11. I am sensitive to the feelings of others at work					
12. People describe me as a warm person					
13. I do not enjoying giving difficult negative feedback to colleagues					
14. My colleagues say I am someone they trust					
15. If someone offers to help me, I usually take them up on their offer					
16. People say I am very outgoing and easy to work with					
17. I try to calm the waters whenever there is conflict between colleagues at work					
18. I show an interest in people's personal lives as well as work interest					
19. I like to mix with other like minded people					
20. I keep my eye on my long term goals					

21. I am happy to adapt my working style to fit in with my manager					
22. I often ask others if there is anything I can do to help					
23. I can talk to anyone at work regardless of their rank					
24. I am keen to be seen as a professional at work					
25. I have a wide network of colleagues and professional contacts					
26. I can get upset if there is personal animosity towards me					
27. Money is not a key motivator for me					
28. I believe in asking others for their opinion in how work gets done					
29. I get upset if colleagues see my kindness to people as being weak					
30. I gain personal satisfaction if people ask me for help					
31. I am more interested in good relationships at work than getting a bonus					
32. I feel valued when others include me in their plans for any work projects					
33. I am quite happy to defend my own ideas when I feel I am right					
34. I will make a stand when I think I am right					

Appendix 7.2 Final list of Personality Items for MTurk

1. It is important for me to have my work recognised
2. I enjoy networking
3. I am able to influence those around me at work
4. I try to see things from other peoples' point of view
5. I listen well to other people
6. I prefer to make my own decisions
7. I am comfortable giving negative feedback
8. Taking the team out for a drink or dinner helps with team bonding
9. Other people seem to open up to me
10. Money is a key motivator for me
11. I will make a stand when I think I am right
12. I always offer to take positions of responsibility in groups
13. I liked to be thanked personally for a job well done
14. I would enjoy a job that involved travelling
15. I try to perform better than my colleagues
16. I can be forceful at work when I want something done
17. It is important to learn to compromise at work
18. I am sensitive to the feelings of others at work
19. People describe me as a warm person
20. I am more interested in good relationships at work than in getting a bonus
21. I enjoy socialising with colleagues
22. I usually offer to present group projects
23. I always follow up invitations to build work relationships with new people
24. I stick my neck out to get ahead at work
25. Work is more fun if there is an element of competition
26. I like to be in control of events at work
27. Other peoples' routines and schedules often frustrate me
28. I prefer working as part of a team than on my own
29. It is important to encourage individual talent at work
30. I am happy to adapt my working stile to fit in with my manager
31. I try to calm things down whenever there is conflict between colleagues at work
32. I gain personal satisfaction if people ask me for help
33. I enjoy being in positions of authority at work
34. Colleagues often turn to me for advice
35. I like to be invited to social events by work colleagues
36. It is important to me that others recognise my expertise
37. People describe me as confident and outgoing
38. I have a good grasp of workplace alliances
39. I handle responsibility well
40. I like to be as helpful as I can with my colleagues
41. I do not enjoy giving difficult feedback to colleagues
42. My colleagues say I am someone they can trust
43. If someone offers to help me I usually take them upon their offer
44. I encourage others to contribute their opinion in how to get the work done
45. I like challenges which show off my skills
46. I like to put my work plans into action
47. I like to be rewarded for my hard work
48. I tend to take criticism personally

49. Colleagues describe me as confident in my work
50. I expect my performance to be rewarded with a bonus
51. People say I am easy to work with
52. I show an interested in colleagues' personal lives as well as their work
53. I get upset if people see my kindness as weakness
54. I can talk to anyone at work, regardless of their rank
55. I feel valued when others include in me in their plans
56. I have a wide network of professional contacts
57. I get upset if there is personal animosity towards me
58. I prefer to manage my team than be managed
59. I make my thoughts very clear to my colleagues
60. If I have a good idea I am not afraid to voice it at work meetings
61. I do my best work when the assignment is fairly difficult
62. Some people take work far too seriously and forget to enjoy it
63. I often socialise with colleagues outside of work
64. Group cohesion helps with effective team performance
65. What others call bullying I call being assertive
66. I prefer to do business in a social setting than in an office
67. I like to have a laugh with my colleagues
68. I always try to improve my performance at work
69. I am quick at spotting a business opportunity
70. Earning a high salary is a fair reflection of how my organisation values me
71. I have a duty to make the most of any opportunities that arise

Appendix 8.1 GAH and GAL new short measure x 14 items

Q9_12Responsibility	Take responsibility in groups
Q9_16Forceful	Can be forceful when I want something done
Q10_4Presentprojects	I usually offer to present group projects
Q10_6Stickneckout	I stick my neck out to get ahead at work
Q10_7Competition	Work is more fun if there is an element of competition
Q10_8Control	I like to be in control of events at work
Q12_4Prefertomanage	I prefer to manage my team than be managed
Q9_8Teambonding	Taking the team out for a social event helps with team bonding
Q10_11IndividTalent	It is important to encourage individual talent at work
Q10_12Adapttomgr	I am happy to adapt my working style to fit in with my manager
Q10_13Calmsconflict	I try to calm things down whenever there is conflict between colleagues at work
Q10_14Beingaskedtohelp	I gain personal satisfaction if people ask me for help
Q11_18Talktoeveryone	I can talk to anyone at work, regardless of their rank
Q12_1Valued	I feel valued when others include me in their plans

Appendix 8.2 The Ten Item Personality Inventory (TIPI: Gosling, Rentfrow & Swann, 2003).

Ten-item measure of the Big Five

Here are a number of personality traits that may or may not apply to you. Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

Disagree strongly	Disagree moderately	Disagree a little	Neither agree nor disagree	Agree a little	Agree moderately	Agree strongly
1	2	3	4	5	6	7

I see myself as:

1. _____ Extraverted, enthusiastic.
2. _____ Critical, quarrelsome.
3. _____ Dependable, self-disciplined.
4. _____ Anxious, easily upset.
5. _____ Open to new experiences, complex.
6. _____ Reserved, quiet.
7. _____ Sympathetic, warm.
8. _____ Disorganized, careless.
9. _____ Calm, emotionally stable.
10. _____ Conventional, uncreative.

TIPI scale scoring ("R" denotes reverse-scored items):

Extraversion: 1, 6R;
Agreeableness: 2R, 7;
Conscientiousness; 3, 8R;
Emotional Stability: 4R, 9;
Openness to Experiences: 5, 10R.

Appendix 8.3 The Utrecht Work Engagement Survey x 9 items (UWES9: Schaufeli & Bakker, 2003).

The following 9 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, cross the '0' (zero) in the space after the statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 1 to 6) that best describes how frequently you feel that way.

Please rate your answer by adding the number (from 1 to 5) that best describes how frequently you have experienced such behaviour:					
Almost never Once a year or less	**Rarely** Once a month or less	**Sometimes** A few times a month	**Often** At least once a month	**Very often** Several times a week	**Always** Every day
1	2	3	4	5	6

1 _____ At my work, I feel bursting with energy* (*VI1)*
2 _____ At my job, I feel strong and vigorous *(VI2)**
3 _____ I am enthusiastic about my job (*DE2)**
4 _____ My job inspires me *(DE3)**
5 _____ When I get up in the morning, I feel like going to work *(VI3)**
6_____ I feel happy when I am working intensely *(AB3*)*
7 _____ I am proud on the work that I do *(DE4)**
8 _____ I am immersed in my work *(AB4)** A few times a week
9 _____ I get carried away when I'm working *(AB5)**

Shortened version (UWES-9); VI= vigor; DE = dedication; AB = absorption

Appendix 8.4 New designed performance item statements for raters

Please mark next to each statement on a scale of 1-5 (1=does not reflect, 5=highly reflects) how far each statement reflects the behaviour (performance) of GAH:

Scale Name	Item statements
GAH	Getting Ahead – need for achievement, need for power. Someone with high GAH wanting to be seen as high status, to be recognised as someone important, and to be someone of influence. Such people are drawn to positions of power, authority and leadership. They like to be seen as leaders of their group, if not their organizations. They like to control their immediate environment as well the resources available to them. They enjoy living well, which comes with high status, and use their social influence to further their careers. Which of the following statements do you think *most* reflects this:

Please rate your answer by adding the number (from 1 to 5) that best describes how frequently you have demonstrated such behaviour:				
Almost never	Rarely	Sometimes	Often	Always
1	2	3	4	5
A few times a year or less	*Once a month or less*	*A few times a month*	*At least once a week*	*Every day*
For instance, Q2: if you manage difficult people at work <u>at least once a week</u>, add 4 to the rating column, if once a month or less, add 2				

Thinking of your behaviour at work how far would you agree with the following statements? Please rate your answer from 1 to 5		Your rating:
1	I have offered to take on a role of responsibility at work	
2	I have been responsible for managing difficult people at work:	
3	My performance appraisal confirmed that I have achieved career goals : None One A few (2-3) Several (3-5) All (more than 5 goals)	

4	My manager has applied my ideas to the department strategic goals:	
5	Over the last 12 months, I have taken time off sick:	
6	When working in groups, I am usually the leader:	
7	I have given difficult feedback to colleagues:	
8	My success at work has been formally acknowledge by my manager:	
9	I have taken professional development to further my career goals:	
10	I sought a position of authority in my department:	
11	I have been asked for my strategic vision regarding projects:	
12	I often work more than my contracted hours:	
13	My views have been formally incorporated into company policy	
14	I have offered practical solutions to my manager about departmental problems:	
15	When people have offered me their business cards I contacted them:	
16	During the last 6 months I worked weekends:	
17	I have gone against organisational policy to make my own decision at times when necessary:	
18	I have attended organisational meetings which were not mandatory but were considered important	
19	I have presented my work to large audiences:	
20	I have made decisions which have impacted on my team:	
21	I have been late for meetings:	
22	I read all the company newsletters to ensure I know what is going on in my organisation:	
23	I have downloaded company documents which outline the changes and processes taking place within my organisation:	
24	I volunteered to stay behind to help my manager with a heavy workload:	
25	I distributed relevant documents to all my team before important meetings:	
26	I am responsible for the following Direct Reports: None 1or 2 2 – 5 5 – 10 10 – 20 More than 20	
27	I have been in my present role for: A month More than 6 months More than a year More than 5 yrs More than 10 yrs	
28	I met my formal performance targets:	
29	I have been in my current department: A month More than 6 months More than a year More than 5 yrs More than 10 yrs	
30	I have been in my current Organisation: A month More than 6 months More than a year More than 5 yrs More than 10 yrs	
31	I cut corners at times in order to achieve my goals:	
32	I was warned about my lateness:	

33	I volunteered to represent my organisation at conferences:	
34	In the last 3 years I have been promoted: Never Once 2-3 promotions More than 4 promotions I am at the highest rank	
35	My current title is: Employee Team Leader Supervisor Manager Senior Manager Executive/Board Member	
36	I manage a budget of: $Nil $500+ $5000+ $50,000+ More than $100,000	
37	My manager has formally commended me on taking risks in my role to achieve goals:	
38	Last year I used of my annual leave allocation: None Some Half Most All	
39	I was invited to organisational dinners/conferences: Never Once Twice More than 3 occasions To every dinner	
40	I introduced my manager to helpful business contacts:	
41	I had a conference paper/article on my work published:	
42	I helped write written company policy documentation:	
43	I met deadlines for group projects: Never Sometimes Mostly Often Always	
44	Over the last 3 years, I received an official Award from my company: Never Once 2-3 times More than three times	
45	During the last 3 years, I received a bonus for performance achievements: None Once Often Every year	
46	I responded to email outside of work hours: Never Rarely Occasionally Often Always	
47	During the last 6 months I controlled my temper in front of others at a time of anger:	

Please mark next to each statement on a scale of 1-5 (1=does not reflect, 5=highly reflects) how far each statement reflects the behaviour (performance) of GAH:

GAL	Getting Along – need for affiliation and sociability with others - means considering their needs, taking time to be helpful, understanding how they work, and supporting others. Such people are usually pleasant to be around as they emotionally stable and considerate. They trust others, spend time building relationships and remember to show appreciation. They are keen to do well in their careers and see getting on with other people as part of this, networking well and mixing socially in an effort to build relationships with like-minded people. Which of the following statements do you think *most* reflects this:

Please score your answer by crossing the number (from 1 to 5) that best describes how frequently you have experienced such behaviour:				
Almost never	Rarely	Sometimes	Often	Always

1	2	3	4	5
A few times a year or less	*Once a month or less*	*A few times a month*	*At least once a week*	*Every day*

Thinking of your behaviour at work how far would you agree with the following statements? Please score your answer by crossing the number (from 1 to 5) that best describes how frequently you have experienced such behaviour:		Your rating:
48	I stayed behind to help a colleague with their workload:	
49	In the past year, I have had conflict with a colleague or my manager: Never Once A few times Often All the time	
50	When a colleague made a mistake in their work, I showed support for them in front of the team:	
51	During a particularly difficult work project, I arranged a social evening for the team:	
52	I was accused of bullying a colleague:	
53	In order to be seen as part of the team, I joined in with gossiping about a colleague: Never Rarely Occasionally Often Always	
54	When I had to change an appointment, I let the other person know in plenty of time:	
55	I shared some useful, work-related, information, it with my colleagues;	
56	I helped a colleague/manager, without being asked, when they were very busy:	
57	I contacted people I had met while networking:	
58	Whenever an urgent project required me to work after hours I offered to stay behind to help:	
59	I organised an evening/present/collection for a colleague's birthday:	
60	When a new colleague began work in my department, I volunteered my time to help them learn new skills:	
61	I received a letter of thanks/acknowledgment from satisfied customers/suppliers	
62	I acknowledged credit to the team when a particular project went well by organising an social event	
63	In my performance appraisal my manager said they found it easy to work with me	
64	I offered to give my time to coach/mentor a colleague	
65	I changed my holiday dates in order to accommodate a colleague's personal needs	
66	I offered help when a colleague was having problems with a difficult customer or other co-worker	
67	I defended a co-worker who was being gossiped about by other co-workers	

68	I took a few items of stationery for my personal use:	
69	I invited a shy colleague to join my team on an evening out	
70	When a colleague was not well or had to deal with personal matters at short notice, I covered for them:	
71	I donated to the company charity collection	
72	I was given a formal warning regarding my rudeness to a colleague:	
73	I had a dispute with a colleague/manager:	
74	When colleagues had a conflict situation I offered to mediate between them:	

Appendix 8.5 Factor analysis and scree plot

Factor Structures GAH & GAL

PAF with Oblimin Rotation Specified to extract 2 factors

	Unrotated Factor Matrix		Rotated Pattern Matrix		Communalities	
	1	2	GAH	GAL	Initial	Extraction
GAH 3	0.71	-0.34	0.79		0.54	0.62
GAH 1	0.81		0.74		0.62	0.7
GAH 6	0.6	-0.35	0.73		0.46	0.48
GAH 4	0.57	-0.31	0.67		0.38	0.42
GAH 2	0.51	0.37	0.52		0.27	0.25
GAH 5	0.52		0.37		0.33	0.27
GAH 7	0.52		0.37		0.27	0.25
GAL 5	0.47	0.41		0.67	0.32	0.4
GAL 3	0.48	0.4		0.65	0.35	0.38
GAL 2	0.44			0.64	0.36	0.4
GAL 6	0.46			0.5	0.27	0.28
GAL 1	0.41			0.47	0.22	0.23
GAL 4	0.38			0.4	0.27	0.18
GAL 7	0.5			0.37	0.31	0.28

KMO = .85

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4.65	33.19	33.19	4.07	29.06	29.06	3.55
2	1.68	12.03	45.22	1.08	7.73	36.8	3.1

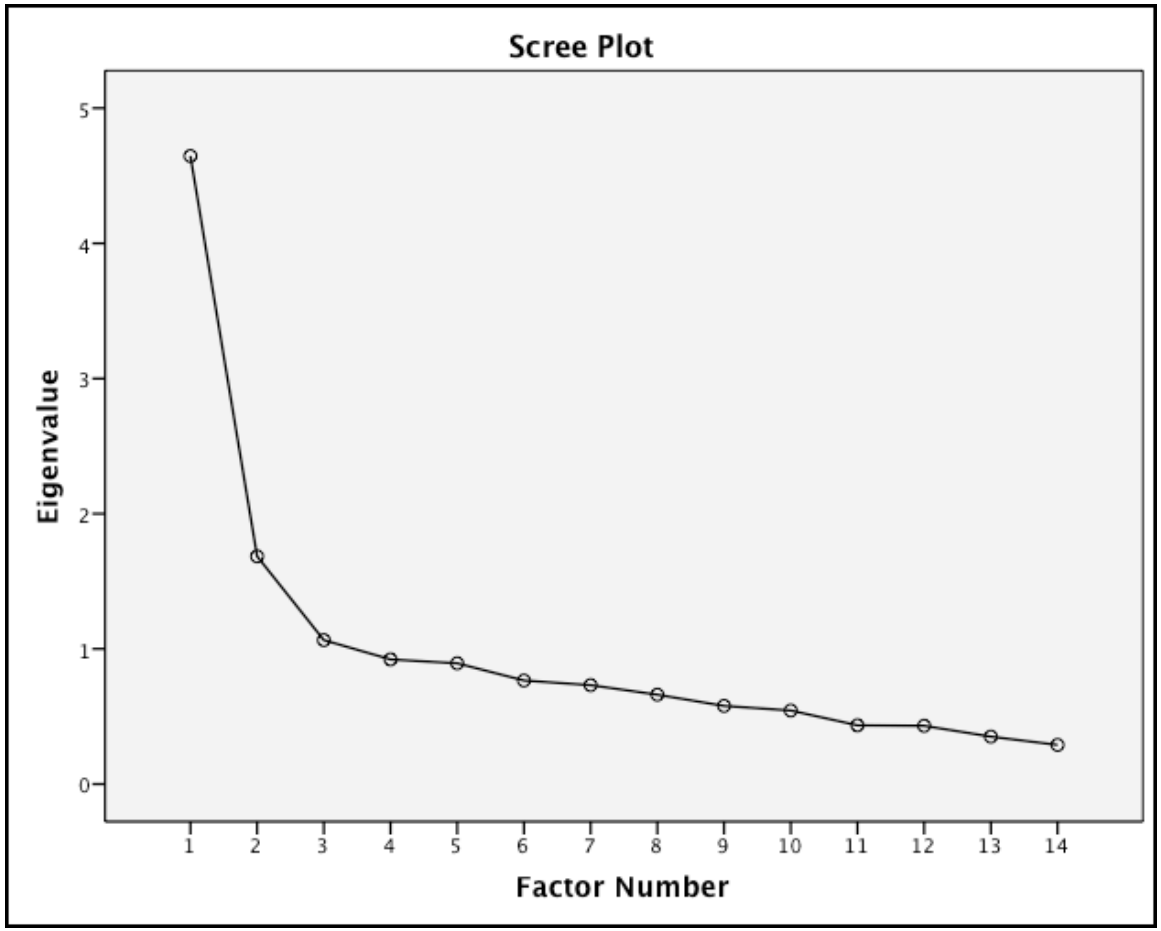
Performance Outcomes

Principal Components Analysis with Varimax Rotation

	Rotated Component Matrix		Communalities	
	Org Loyalty	**Career Success**	**Initial**	**Extracted**
Time in current dept.	0.93		1	0.87
Time in current role.	0.92		1	0.85
Time in current org.	0.91		1	0.86
Number of direct reports		0.71	1	0.55
Promotion within last 3 years		0.68	1	0.49
Career goals achieved		0.66	1	0.45
Job title		0.65	1	0.43
Bonus awared within last 3 years		0.55	1	0.31
Annual income		0.32	1	0.15

KMO = .78

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.08	34.26	34.26	3.08	34.26	34.26	2.69	29.84	29.84
2	1.87	20.81	55.06	1.87	20.81	55.06	2.27	25.22	55.06


Scree Plot
Eigenvalue
5
4
3
2
1
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Factor Number

Appendix 8.6 Factor Analysis of newly designed performance items x 14

Performance Item	Factor Loadings	
GAH Performance 5	.68	
GAH Performance 9	.63	
GAH Performance 11	.67	
GAH Performance 13	.69	
GAH Performance 14	.64	
GAH Performance 15	.73	
GAH Performance 19	.70	
GAL Performance 6	.54	
GAL Performance 8	.63	
GAL Performance 9	.63	
GAL Performance 10	.65	
GAL Performance 14	.57	
GAL Performance 24	.69	
GAL Performance 25	.69	
KMO	.93	
Cronbach's Alpha	.91	
Factor		
Initial Eigenvalues	Total	6.56
	% of Variance	46.83
	Cumulative %	46.83
Extraction Sums of Squared Loadings	Total	5.99
	% of Variance	42.81
	Cumulative %	42.81

Appendix 8.7 The International Personality Item Pool (IPIP: Goldberg, 1999; Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger & Gough, 2006).

How Accurately Can You Describe Yourself?

Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Indicate for each statement whether it is

1. Very Inaccurate

2. Moderately Inaccurate

3. Neither Accurate Nor Inaccurate

4. Moderately Accurate

5. Very Accurate as a description of you.

		Very Inaccurate	Moderately Inaccurate	Neither Accurate Nor Inaccurate	Moderately Accurate	Very Accurate	
1.	Am the life of the party.	O	O	O	O	O	(1+)
2.	Feel little concern for others.	O	O	O	O	O	(2-)
3.	Am always prepared.	O	O	O	O	O	(3+)
4.	Get stressed out easily.	O	O	O	O	O	(4-)
5.	Have a rich vocabulary.	O	O	O	O	O	(5+)
6.	Don't talk a lot.	O	O	O	O	O	(1-)

7.	Am interested in people.	O	O	O	O	O	(2+)
8.	Leave my belongings around.	O	O	O	O	O	(3-)
9.	Am relaxed most of the time.	O	O	O	O	O	(4+)
10.	Have difficulty understanding abstract ideas.	O	O	O	O	O	(5-)
11.	Feel comfortable around people.	O	O	O	O	O	(1+)
12.	Insult people.	O	O	O	O	O	(2-)
13.	Pay attention to details.	O	O	O	O	O	(3+)
14.	Worry about things.	O	O	O	O	O	(4-)
15.	Have a vivid imagination.	O	O	O	O	O	(5+)
16.	Keep in the background.	O	O	O	O	O	(1-)
17.	Sympathize with others' feelings.	O	O	O	O	O	(2+)
18.	Make a mess of things.	O	O	O	O	O	(3-)
19.	Seldom feel blue.	O	O	O	O	O	(4+)
20.	Am not interested in abstract ideas.	O	O	O	O	O	(5-)
21.	Start conversations.	O	O	O	O	O	(1+)
22.	Am not interested in other people's problems.	O	O	O	O	O	(2-)
23.	Get chores done right away.	O	O	O	O	O	(3+)
24.	Am easily disturbed.	O	O	O	O	O	(4-)
25.	Have excellent ideas.	O	O	O	O	O	(5+)
26.	Have little to say.	O	O	O	O	O	(1-)
27.	Have a soft heart.	O	O	O	O	O	(2+)
28.	Often forget to put things back in their proper place.	O	O	O	O	O	(3-)
29.	Get upset easily.	O	O	O	O	O	(4-)
30.	Do not have a good imagination.	O	O	O	O	O	(5-)
31.	Talk to a lot of different people at parties.	O	O	O	O	O	(1+)
32.	Am not really interested in others.	O	O	O	O	O	(2-)
33.	Like order.	O	O	O	O	O	(3+)
34.	Change my mood a lot.	O	O	O	O	O	(4-)
35.	Am quick to understand things.	O	O	O	O	O	(5+)
36.	Don't like to draw attention to myself.	O	O	O	O	O	(1-)

37.	Take time out for others.	O	O	O	O	O	(2+)
38.	Shirk my duties.	O	O	O	O	O	(3-)
39.	Have frequent mood swings.	O	O	O	O	O	(4-)
40.	Use difficult words.	O	O	O	O	O	(5+)
41.	Don't mind being the center of attention.	O	O	O	O	O	(1+)
42.	Feel others' emotions.	O	O	O	O	O	(2+)
43.	Follow a schedule.	O	O	O	O	O	(3+)
44.	Get irritated easily.	O	O	O	O	O	(4-)
45.	Spend time reflecting on things.	O	O	O	O	O	(5+)
46.	Am quiet around strangers.	O	O	O	O	O	(1-)
47.	Make people feel at ease.	O	O	O	O	O	(2+)
48.	Am exacting in my work.	O	O	O	O	O	(3+)
49.	Often feel blue.	O	O	O	O	O	(4-)
50.	Am full of ideas.	O	O	O	O	O	(5+)

Note. These five scales were developed to measure the Big-Five factor markers reported in the following article: Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment, 4,* 26-42. They are not the IPIP scales developed to measure the five NEO-PI-R domains. The numbers in parentheses after each item indicate the scale on which that item is scored (i.e., of the five factors: (1) Extraversion, (2) Agreeableness, (3) Conscientiousness, (4) Emotional Stability, or (5) Intellect/Imagination) and its direction of scoring (+ or -). These numbers should not be included in the actual survey questionnaire. For further information on scoring IPIP scales, click the following link: Scoring Instructions.

Converting IPIP Item Responses to Scale Scores

Here is how to score IPIP scales: For + keyed items, the response "Very Inaccurate" is assigned a value of 1, "Moderately Inaccurate" a value of 2, "Neither Inaccurate nor Accurate" a 3, "Moderately Accurate" a 4, and "Very Accurate" a value of 5. For - keyed items, the response "Very Inaccurate" is assigned a value of 5, "Moderately Inaccurate" a value of 4, "Neither Inaccurate nor Accurate" a 3, "Moderately Accurate" a 2, and "Very Accurate" a value of 1. Once numbers are assigned for all of the items in the scale, just sum all the values to obtain a total scale score. Easy, no? (If you are having problems, you might contact the IPIP consultant.) *Return Home*

Appendix 8.8 The Core Self Evaluation Scale (CSES: Judge, Bono, Erez & Locke, 2005).

Instructions: Below are several statements about you with which you may agree or disagree. Using the response scale below, indicate your agreement or disagreement with each item by placing the appropriate number on the line preceding that item.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

1. _____ I am confident I get the success I deserve in life.
2. _____ Sometimes I feel depressed. (r)
3. _____ When I try, I generally succeed.
4. _____ Sometimes when I fail I feel worthless. (r)
5. _____ I complete tasks successfully.
6. _____ Sometimes, I do not feel in control of my work. (r)
7. _____ Overall, I am satisfied with myself.
8. _____ I am filled with doubts about my competence. (r)
9. _____ I determine what will happen in my life.
10. _____ I do not feel in control of my success in my career. (r)
11. _____ I am capable of coping with most of my problems.
12. _____ There are times when things look pretty bleak and hopeless to me. (r)

Note: r = reverse-scored.

Source: Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2003). The Core Self-Evaluations Scale (CSES): Development of a measure. *Personnel Psychology, 56,* 303-331.

Appendix 8.9 The Dark Side Scale - The Short Dark Triad (SD3), Paulhus, D. L., & Jones, D. N. (2011; Jones & Paulhus, 2014)

SPSS Variable name in SPSS DST (dark side trait)	***R = Reversed***
	Machiavellianism Subscale
DST1	It's not wise to tell your secrets.
DST4	I like to use clever manipulation to get my way.
DST7	Whatever it takes, you must get the important people on your side.
DST10	Avoid direct conflict with others because they may be useful in the future.
DST13	It's wise to keep track of information that you can use against people later.
DST16	You should wait for the right time to get back at people.
DST19	There are things you should hide from other people because they don't need to know.
DST22	Make sure your plans benefit you, not others.
DST25	Most people can be manipulated.
	Narcissism subscale
DST2	People see me as a natural leader.
DST5	I hate being the center of attention. **(R)**
DST8	Many group activities tend to be dull without me.
DST11	I know that I am special because everyone keeps telling me so.
DST14	I like to get acquainted with important people.
DST17	I feel embarrassed if someone compliments me. **(R)**
DST20	I have been compared to famous people.
DST23	I am an average person. **(R)**
DST26	I insist on getting the respect I deserve.
	Psychopathy
DST3	I like to get revenge on authorities.
DST6	I avoid dangerous situations. **(R)**
DST9	Payback needs to be quick and nasty.
DST12	People often say I'm out of control.
DST15	It's true that I can be mean to others.
DST18	People who mess with me always regret it.
DST21	I have never gotten into trouble with the law. **(R)**
DST24	I enjoy having sex with people I hardly know
DST27	I'll say anything to get what I want.

R: 5, 6, 17, 21, 23

SCORING AND PSYCHOMETRICS

Reverse the scoring on all the reversals items (marked with R). Then calculate the mean of the 9 items within each subscale: The following norms are based on a sample of 387 undergraduate students.

NORMS

	Mean	S.D.	Alpha
Machiavellianism	3.1	.76	.78
Narcissism	2.8	.88	.77
Psychopathy	2.4	1.0	.80

INTERCORRELATIONS

	Machiavellianism	Narcissism	Psychopathy
Machiavellianism	--	.23	.37
Narcissism		--	.20
Psychopathy			--

CITATIONS for use in research:

Paulhus, D. L., & Jones, D. N. (2011, January). *Introducing a short measure of the Dark Triad*. Poster presented at the meeting of the Society for Personality and Social Psychology, San Antonio.

Jones, D. N., & Paulhus, D. L. (in press). Introducing the Short Dark Triad (SD3): A brief measure of dark personality traits. *Assessment*.